

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K01R-01-BAC** **Middle Meherrin River**

Location: Middle Meherrin River from Crupper Run to its mouth on the South Meherrin River

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Station ID: 2-MMR000.69 0/1 violation rate for fecal coliform - No New Data since 2004 assessment cycle

Middle Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			7.12

Sources:

Source Unknown

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Cause Group Code **K01R-02-BAC** **South Meherrin River**

Location: South Meherrin River from Finneywood Creek to Blackstone Creek

City / County: Lunenburg Co. Mecklenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 2-SMR007.48 2/11 violation rate for e coli

South Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			7.02

Sources:

Source Unknown

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Cause Group Code **K01R-03-BEN** **Finneywood Creek**

Location: Finneywood Creek from its headwaters to its mouth on the South Meherrin River

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID: 5AFNY004.78 Stream runs through a pasture with active cattle access. Flow was minimal, sedimentation was extensive, organic solids were abundant in channel. Minimal habitat present.

Finneywood Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			4.83

Sources:

Source Unknown

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Cause Group Code **K02R-01-BAC** **North Meherrin River**

Location: North Meherrin River from its confluence with Couches Creek to Reedy Creek

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5ANMR013.95 2/19 violation rate for e coli

North Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			7.55

Sources:

Source Unknown

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Cause Group Code **K02R-02-BAC** **Big Juniper Creek**

Location: Big Juniper Creek from Little Juniper Creek to its mouth on the North Meherrin River

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 2-BJC001.00 2/11 violation rate for e coli

Big Juniper Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			6.57

Sources:

Source Unknown

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Cause Group Code **K02R-03-BAC** **Kits Creek**

Location: Kits Creek from its headwaters to its mouth on the North Meherrin River

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5AKIT002.65 2/2 violation rate for e coli

Kits Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			4.72

Sources:

Source Unknown

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Cause Group Code **K02R-03-BEN** **Kits Creek**

Location: Kits Creek from its headwaters to its mouth on the North Meherrin River

City / County: Lunenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

Station ID: 5AKIT002.65 Impaired Benthic Assessment - Limited instream habitat consisted of riffles dominated by bedrock.
Excellent riparian zone.

Kits Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			4.72

Sources:

Source Unknown

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Cause Group Code **K02R-04-BAC** **Reedy Creek**

Location: Reedy Creek from its headwaters to its mouth on the North Meherrin River

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5ARYK002.34 3/9 violation rate for e coli

Reedy Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			10.25

Sources:

Source Unknown

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Cause Group Code **K03R-01-BAC** Flat Rock Creek

Location: Flat Rock Creek from the Kenbridge PWS intake to its mouth on the Meherrin River

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 4A

Station ID: 5AFRC002.98 1/23 violation rate for fecal coliform (no new data)
5AFRC007.54 3/12 violation rate for e coli
5AFRC009.53 3/12 violation rate for e coli

Segment included in 2006 Flat Rock LDA TMDL

Flat Rock Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			14.29

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K03R-02-BAC** Flat Rock Creek

Location: Flat Rock Creek from its headwaters to Kenbridge PWS intake just upstream of Route 637.

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Station ID: 5AFRC014.70 4/12 violation rate for e coli & 5AFRC013.25 6/12 violation rate

Segment included in 2006 Flat Rock LDA TMDL

Flat Rock Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			5.21

Sources:

Source Unknown

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Cause Group Code **K03R-03-BAC** **Broad Branch**

Location: Broad Branch from its headwaters to its mouth on Flat Rock Creek

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Station ID: 5ABRD002.09 4/12 violation rate for e coli

Segment included in 2006 Flat Rock LDA TMDL

Broad Branch	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			3.46

Sources:

Source Unknown

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Cause Group Code **K03R-04-BAC** **Meherrin River**

Location: Meherrin River from its confluence with Crooked Creek to its confluence with Flat Rock Creek

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5AMHN102.61 3/9 violation rate for e coli

Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			3.17

Sources:

Source Unknown

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Cause Group Code **K03R-05-BAC** Flat Rock Creek, Unnamed Tributary

Location: From its headwaters to its mouth on Flat Rock Creek.

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5AXFH001.74 6/12 violation rate for e coli

Flat Rock Creek, Unnamed Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			3.01

Sources:

Source Unknown

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Cause Group Code **K04R-01-BAC** **Stony Creek**

Location: Stony Creek from its headwaters to its mouth

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

During the 2004 cycle, the segment was assessed not supporting of the Recreation use support goal based on a fecal coliform violation rate of 3/19 at the Rt. 602 bridge (5ASNY000.65).

There was no new data since 02/2001, therefore the 2004 assessment status is carried over.

Stony Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			13.73

Sources:

Source Unknown

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Cause Group Code **K05R-01-BAC** **Genito Creek**

Location: Mainstem from its headwaters to its mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Genito Creek was originally assessed as impaired of the Recreation Use in 2006 due to E. coli violations at the Route 623 bridge (5AGTO001.16). During the 2008 cycle the violation rate increased to 4/11.

Genito Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			7.89

Sources:

Source Unknown

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Cause Group Code **K05R-02-BAC** **Meherrin River**

Location: Meherrin River from Taylors Creek downstream to Reedy Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2006 cycle, the Meherrin River from Taylors Creek to Reedy Creek was assessed not supporting of the Recreation use support goal based on fecal coliform violations at 5AMHN068.30, 5AMHN073.98, and 5AMHN082.13 and E. coli violations at 5AMHN082.13.

The segment was originally considered fully supporting but threatened during the year 1998 cycle, but was downgraded during the 2002 cycle. The E. coli impairment was added during the 2006 cycle.

During the 2008 cycle, the E. coli violation rate was 6/21 at 5AMHN082.13.

Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			26.14

Sources:

Source Unknown

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Cause Group Code **K05R-03-BAC** **Briery Branch**

Location: The mainstem of Briery Branch.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The segment was assessed in 2004 as not supporting of the Recreation use support goal based on a fecal coliform violation rate of 4/12 at 5A-PL-GR-B (now called 5ABRY001.88), a Confined Animal Feeding Operation special study station located at the Route 647 bridge.

There has been no additional sampling since 2000, therefore the impairment has been carried over into the 2006 cycle.

Briery Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			3.97

Sources:

Animal Feeding Operations Source Unknown
(NPS)

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Cause Group Code **K06R-01-DO** **Great Creek**

Location: Great Creek upstream of the Dixon Millpond dam

City / County: Lunenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The segment of Great Creek above the Dixon Millpond dam was assessed in 2002 as not supporting of the Aquatic Life Use based on pH violations at 5AGTC025.70 (previously called PL-18A), and at 5AXEA000.04 (previously called PL-18B). In 2004, the segment continued to be impaired due to pH. The pH TMDL is due in 2014. No additional monitoring has occurred since 2002, therefore the previous assessment remains.

These stations are confined animal feeding operation (CAFO) special study stations.

Great Creek	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
Oxygen, Dissolved - Total Impaired Size by Water Type:			2.77

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K06R-01-PH** **Great Creek**

Location: Great Creek upstream of the Dixon Millpond dam

City / County: Lunenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The segment of Great Creek above the Dixon Millpond dam was originally assessed in 2002 as not supporting of the Aquatic Life Use based on pH violations at 5AGTC025.70 (previously called PL-18A), and at 5AXEA000.04 (previously called PL-18B). In 2004, the impairment for dissolved oxygen was added. The DO TMDL is due in 2016. No additional monitoring has occurred since 2002, therefore the previous assessment remains.

These stations are confined animal feeding operation (CAFO) special study stations.

Great Creek	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
pH - Total Impaired Size by Water Type:			2.77

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K06R-02-BAC** **Great Creek**

Location: The mainstem of Great Creek, excluding Great Creek Reservoir.

City / County: Brunswick Co. Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the year 2006 cycle, the previous bacteria impairments (VAP-K06R-01, -02, and -03) in Great Creek were combined. The segment had been assessed since 2004 as not supporting of the Recreation Use goal based on fecal coliform violations at 5AXEA000.04, 5A-PL-GR-A, and 5AGTC005.40, and E. coli violations at 5AGTC017.75. 5AXEA000.04 and 5A-PL-GR-A are confined animal feeding operation (CAFO) special study stations that were discontinued in 2002.

During the 2008 cycle, the segment remained impaired and converted to E. coli based on an E. coli violation rate of 2/11 at station 5AGTC017.75.

Great Creek	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			24.34

Sources:
Source Unknown

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Cause Group Code **K07R-02-BAC** **Roses Creek**

Location: From the Alberta Sewage Treatment Plant discharge to the mouth at Great Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Roses Creek from the Alberta STP discharge downstream to its mouth at Great Creek was evaluated not supporting of the Recreation use support goal based on fecal coliform standard violations at the Route 678 bridge (5ARSE001.22). The TMDL was completed for E. coli and was adopted by the SWCB on 12/2/04.

During the 2008 cycle, the segment remained impaired with an E. coli violation rate of 9/26 at 5ARSE001.22. No additional data has been collected since the 2006 cycle for stations 5ARSE006.68 and 5ARSE0009.87.

Roses Creek	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			9.81

Sources:

Municipal Point Source Non-Point Source
Discharges

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Cause Group Code **K07R-03-BEN** **Rocky Run**

Location: Rocky Run from the confluence with Sandy Branch downstream to its mouth at Roses Creek

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, Rocky Run was assessed as impaired of the Aquatic Life Use due to a benthic impairment at freshwater probabilistic monitoring station 5ARYR001.23.

Rocky Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			1.20

Sources:

Source Unknown

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Cause Group Code **K08L-01-DO** **Emporia Lake**

Location: Emporia Lake

City / County: Greenville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In 2006 Dissolved oxygen violations in bottom waters during the summer months. The violation rate was 2/19 during periods where the temperature differential was <4C, therefore the lake is considered impaired and needing a TMDL. The lake should be reassessed once nutrient WQS are developed.

The phosphorus and chlorophyll Trophic State Indices were less than 60. The secchi TSI was considerably larger than the others, therefore it is believed that the high Secchi TSI is a result of a prevalence of inorganic matter and is not considered.

In 2008 this segment failed for aquatic use due to DO violations. The total DO violation rate for both stations was 4/34

Emporia Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			259.80

Sources:

- Changes in Ordinary Stratification and Bottom Water Hypoxia/Anoxia

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Chowan River and Dismal Swamp Basins

Cause Group Code **K08L-02-PH** Brunswick Lake

Location: Brunswick Lake

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

In 2006 Brunswick Lake was assessed as not supporting the Aquatic Life Use due to low dissolved oxygen in bottom waters. The low DO only occurred during periods of stratification, however the TSIs for the lake were above 60:

TSI(TP) = 64
TSI(CA) = 69
TSI(SD) = 66

Therefore the low dissolved oxygen was considered to be exacerbated by excessive nutrients and a TMDL was required. In addition, both total phosphorus and chlorophyll a were considered observed effects b/c of screening level exceedances. The lake should be reevaluated once nutrient criteria are established.

For the 2008 cycle nutrient criteria was developed for lakes and DO was no longer impaired. Only pH was impaired at 5ARDC007.30 with a violation rate of 5/36.

Brunswick Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			138.38

Sources:

Source Unknown

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Cause Group Code **K09R-01-DO** **Meherrin River**

Location: The Meherrin River from the Emporia Reservoir Dam to the Route 730 bridge

City / County: Emporia City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Meherrin River was initially listed during the 1998 cycle as fully supporting but threatened of the Aquatic Life use support goal and was downgraded to impaired during the 2004 cycle due to a dissolved oxygen violation rate of 7/49 at the Route 602 bridge (5AMHN052.34). During the 2006 cycle, the violation rate fell to 2/37, therefore the segment was delisted.

However, during the 2008 cycle, the violation rate was 5/38, therefore the segment was relisted. The TMDL is due in 2020.

Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			26.46

Sources:

Dam or Impoundment Source Unknown

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Cause Group Code **K09R-01-PCB** **Meherrin River**

Location: The Meherrin River from the Emporia Reservoir Dam to the Route 730 bridge

City / County: Emporia City

Use(s): Fish Consumption

Cause(s) /

VA Category: PCB in Fish Tissue / 5A

During the year 2004 cycle, PCBs in fish tissue was added as an impairing cause due to PCBs in fish tissue in 2 samples at station 5AMHN051.43. During the 2006 cycle, VDH issued a fish consumption advisory for PCBs from the Emporia dam to the Route 730 bridge. The segment was extended to match the advisory. The TMDL due date for PCBs is 2016.

Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
PCB in Fish Tissue - Total Impaired Size by Water Type:			26.46

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K11R-01-BAC** Fontaine Creek

Location: From the Route 633 bridge to the tributary between Routes 627 and 639.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The segment was assessed as not supporting of the Recreation use goal based on the following violation rates in 2004:

Fecal coliform 4/24 at the Rt. 639 bridge (5AFON025.64)
Fecal coliform 3/18 at the Rt. 627 bridge (5AFON027.33)

These stations were confined animal feeding operation (CAFO) special study stations and ceased in 2002.

During the 2006 cycle, the stations remained impaired for fecal coliform. No additional data was collected in the 2008 cycle, therefore the segment remains impaired.

Fontaine Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			9.87

Sources:

Source Unknown

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Cause Group Code **K11R-02-DO** Fontaine Creek and all its tributaries in VAP-K12R.

Location: From the Route 301 bridge in VAP-K11R to mouth at Meherrin River in watershed VAP-K12R.

City / County: Greenville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

In 1998, Fontaine Creek from Beaverdam Creek to its mouth at the Meherrin River was assessed not supporting of the Aquatic Life use support goal because of dissolved oxygen violations. All tributaries entering this segment were considered fully supporting but threatened. The DO TMDL for the mainstem is due in 2010.

During the year 2006 and 2008 cycles, the segment was reassessed against the new Class VII swampwater criteria. The segment continues to show dissolved oxygen violations and will be considered Category 4C for dissolved oxygen until the new criteria can be developed.

Fontaine Creek and all its tributaries in VAP-K12R.	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			55.24

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

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Cause Group Code **K11R-03-BAC** **Cattail Creek**

Location: Cattail Creek upstream of Collier Branch.

City / County: Greenville Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Beginning in the 2004 cycle, the segment was assessed as not supporting of the Recreation Use goal based on a fecal coliform violation rate of 3/17 and 5/17 at 5ACTT005.89 and 5ACTT002.73, respectively. The TMDL is due in 2016.

These stations are confined animal feeding operation (CAFO) special study stations and are located at the Route 633 and Route 622 bridges.

Because monitoring has not occurred since 2002, the 2004 assessment was carried over to 2006 and 2008.

Cattail Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			6.34

Sources:

Source Unknown

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Cause Group Code **K11R-03-DO** **Cattail Creek**

Location: Cattail Creek upstream of Collier Branch.

City / County: Greenville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The segment was assessed in 2002 as not supporting the Aquatic Life Use because of dissolved oxygen violations. The TMDL is due in 2014.
The violation rate was:
DO 3/16 at the Route 632 bridge (5ACTT002.73/PL-15B)

This station is a confined animal feeding operation (CAFO) special study station.

Because monitoring has not occurred since 2002, the 2004 assessment was carried over to 2006 and 2008.

Cattail Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			6.34

Sources:
Source Unknown

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Cause Group Code **K11R-03-PH** **Cattail Creek**

Location: Cattail Creek upstream of Collier Branch.

City / County: Greenville Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The segment was assessed in 2002 as not supporting the Aquatic Life Use because of pH violations at two locations. The TMDL is due in 2014.
The violation rates were:
pH 4/16 at the Rt. 633 bridge (5ACTT005.89/PL-15A);
pH 4/16 at the Route 632 bridge (5ACTT002.73/PL-15B)

These stations are confined animal feeding operation (CAFO) special study stations.

Because monitoring has not occurred since 2002, the 2004 assessment was carried over to 2006 and 2008.

Cattail Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			6.34

Sources:

Source Unknown

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Cause Group Code **K11R-04-BAC** Fontaine Creek

Location: Fontaine Creek from the first confluence upstream of Mitchell to the Route 301 bridge

City / County: Greenville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

In the 2004 cycle, the segment was assessed as not supporting the Recreation Use support goal based on a fecal coliform violation rate of 2/14 at 5AFON022.04, located at the Route 629 bridge. Because there had been no additional monitoring since 2000, the previous assessment was carried over to 2006. In 2006, the segment was extended to the Route 301 bridge to better coincide with the Class VII designation.

During the 2008 cycle, additional monitoring was conducted at the upstream side of the Route 301 bridge (5AFON014.38). The station had an unacceptable E. coli violation rate of 3/10, therefore the bacteria impairment will convert to E. coli and the TMDL due date will remain 2016.

Fontaine Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			9.12

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K12R-01-BAC** Fontaine Creek

Location: From the Route 301 bridge to its mouth at the Meherrin River. Nested within segment VAP-K11R-03.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

In 2002 the segment of Fontaine Creek from Mill Creek to the Meherrin River was assessed not supporting of the Recreation Use based on fecal coliform violations at the Route 625 bridge (5AFON006.07). During the year 2006 cycle, the segment was changed to the Route 301 bridge downstream to the Meherrin River and E. coli was added as an impairment. During the 2008 cycle, the segment remained impaired for bacteria with an E. coli violation rate of 4/11 and the impairment converted to E. coli.

Fontaine Creek	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			13.39

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K13R-01-BAC** **Tarrara Creek**

Location: This cause encompasses the entirety of Tarrara Creek located northeast of Boykins.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on the new E.coli bacteria data exceeds the swimming criteria indicator with 5 violates/
23 obs at Station 5ATTR002.50.

Tarrara Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			13.94

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K13R-01-DO** **Tarrara Creek**

Location: This cause encompasses the entirety of Tarrara Creek located northeast of Boykins.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the depressed DO concentrations, impairment continued from 2004 IR although segment Class has change from III to VII).

Tarrara Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			13.94

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K13R-02-BAC** **Flat Swamp**

Location: This cause encompasses the are downstream of the confluence of Bellyache Swamp and Frank's Branch extending downstream to its confluence with Tarrara Creek.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreational Use is impaired based on Fecal Coliform data from previous Assessment. No new data (E.Coli) for the 2008 Assessment cycle was collected.

Flat Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			8.14

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K13R-02-DO** **Flat Swamp**

Location: This cause encompasses the are downstream of the confluence of Bellyache Swamp and Frank's Branch extending downstream to its confluence with Tarrara Creek.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on DO data from 2004 that exceed the criteria for this parameter. However this water is Class VII and there is not an established criteria for DO for 2008 Assessment . We are not able to determine use support for this 2008 cycle.

Flat Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			8.14

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K14L-02-DO** **Nottoway Falls Lake**

Location: Nottoway Falls Lake from its impounding structure to its backwaters on the Nottoway River.

City / County: Lunenburg Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID: 5ANTW143.06 12/32 violation rate for dissolved oxygen. DO samples from entire water column assessed since lake is not part of 187 regulation.

Nottoway Falls Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			32.26

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K14R-01-BAC** **Nottoway River**

Location: Nottoway River from its headwaters to the backwaters of Nottoway Falls Lake.

City / County: Lunenburg Co. Nottoway Co. Prince Edward Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Station ID: 5ANTW155.06 7/32 violation rate for e coli

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			16.93

Sources:

Livestock (Grazing or Feeding Operations)	Wastes from Pets	Wildlife Other than Waterfowl
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K14R-02-BAC** **Big Hounds Creek**

Location: Big Hounds Creek from Lunenburg Beach Lake Dam to its mouth on the Nottoway River

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Station ID: 5ABHC003.73 3/13 violation rate for e coli

Big Hounds Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			10.07

Sources:

Livestock (Grazing or Feeding Operations)	Unspecified Domestic Waste	Wastes from Pets	Wildlife Other than Waterfowl
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K14R-03-BAC** Little Hounds Creek

Location: Little Hounds Creek from its headwaters to its mouth on Big Hounds Creek

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5ALTH001.58 3/9 violation rate for e coli

Little Hounds Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			7.90

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K15L-01-DO** **Nottoway Pond**

Location: Nottoway Pond from its impounding structure to its backwaters on Lazaretto Creek.

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID: 5ALZT000.12 3/15 violation rate for dissolved oxygen. Samples collected in epilimnion during stratified months and all other samples during non-stratified months included in assessment.

Nottoway Pond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			50.69

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K15R-01-BAC** Little Nottoway River

Location: Little Nottoway River from its confluence with Lazaretto Creek to its mouth on the Nottoway River.

City / County: Nottoway Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Station ID: 5ALNT009.80 2/12 violation rate for e coli & 5ALNT004.68 5/13 violation rate for e coli

Little Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			9.82

Sources:

Livestock (Grazing or Feeding Operations)	Unspecified Domestic Waste	Wastes from Pets	Wildlife Other than Waterfowl
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K15R-02-BAC** Carys Creek

Location: Carys Creek from its headwaters to its mouth

City / County: Nottoway Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID:5ACRY001.10 2/12 violation rate for e coli

Carys Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			6.07

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K16L-01-DO** Fort Pickett Reservoir

Location: Fort Pickett Reservoir from its impounding structure to its backwaters

City / County: Brunswick Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5A

Station IDs: 5ANTW127.14 Dissolved Oxygen - 4/46 Violation Rate
Insufficient Data to make nutrient assessment
Chlorophyll a - 0/2 Violation Rate (90% calculated from 2 sample yrs)
Total Phosphorus - 1/2 Violation Rate (Median calculated from 2 sample years)

Transitional Zone Stations: 5ACDR000.30 Dissolved Oxygen - 10/47 Violation Rate
5ANTW128.67 Dissolved Oxygen - 5/42 Violation Rate

Pooled Data:
Dissolved Oxygen - 19/135 Violation Rate
pH - 2/166 Violation Rate

Fort Pickett Reservoir	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:		318.95	

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K16R-01-BEN** Hurricane Branch, Unnamed Tributary

Location: From its headwaters to the mouth on Hurricane Branch.

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 4A Benthic-Macroinvertebrate Bioassessments / 5A

Station ID: 5AXBL000.80 Impaired for VSCI & 5AXBL001.18 Impaired for VSCI

Hurricane Branch, Unnamed Tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			3.07

Sources:

Source Unknown Unspecified Urban
Stormwater

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K16R-02-BAC** Beaver Pond Creek

Location: Beaver Pond Creek from its headwaters to its mouth on the Nottoway River

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Station ID: 5ABPC000.12 12/24 violation rate for e coli

Beaver Pond Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			7.14

Sources:

Livestock (Grazing or Feeding Operations)	Unspecified Domestic Waste	Wastes from Pets	Wildlife Other than Waterfowl
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K16R-03-DO** Hurricane Branch

Location: Hurricane Branch from Gettysburg Road to its confluence with the Nottoway River

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

Station ID: 5AHUR001.91 2/6 violation rate for Dissolved Oxygen

Hurricane Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			1.94

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K16R-04-BAC** **Nottoway River**

Location: Nottoway River from the Fort Pickett raw water intake to its confluence with Hurricane Branch.

City / County: Brunswick Co. Nottoway Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5ANTW126.94 2/9 violation rate for e coli

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			3.38

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K16R-05-BAC** **Crooked Creek**

Location: Crooked Creek from its confluence with Seay Creek to the backwaters of Fort Pickett Reservoir

City / County: Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Station ID: 5ACKD000.40 2/9 violation rate for e coli

Crooked Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			2.98

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K17R-02-BAC** **Waqua Creek**

Location: Waqua Creek upstream of the Route 46 bridge

City / County: Brunswick Co. Lunenburg Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

In 2004, the segment was assessed not supporting of the Recreation Use goal based on the following violations:

Fecal coliform 5/19 at 5AWAQ020.52 (Route 617) and 2/10 at 5AWAQ022.17 (private road).

These stations were confined animal feeding operation (CAFO) special study stations.

There has been no additional monitoring since 2002, so the 2004 assessment is carried over.

Waqua Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			2.18

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K17R-02-DO** **Waqua Creek**

Location: Waqua Creek upstream of the Route 46 bridge

City / County: Brunswick Co. Lunenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

In 2004, the segment was assessed not supporting of the Aquatic Life Use goal based on the following violations:

DO 2/11 at 5AWAQ022.17 (private road);

These stations were confined animal feeding operation (CAFO) special study stations.

There has been no additional monitoring since 2002, so the 2004 assessment is carried over.

Waqua Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			2.18

Sources:

Natural Conditions - Water Source Unknown
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K17R-02-PH** **Waqua Creek**

Location: Waqua Creek upstream of the Route 46 bridge

City / County: Brunswick Co. Lunenburg Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

In 2004, the segment was assessed not supporting of the Aquatic Life Use goal based on the following violations:

pH 7/17 at 5AWAQ020.52 (Route 617);
pH 10/11 at 5AWAQ022.17 (private road);

These stations were confined animal feeding operation (CAFO) special study stations.

There has been no additional monitoring since 2002, so the 2004 assessment is carried over.

Waqua Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			2.18

Sources:

Natural Conditions - Water Source Unknown
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K19R-02** Harris Creek

Location: Harris Swamp from rivermile 8.72 downstream to the confluence with Smith Branch.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C pH / 4C

During the 2008 cycle, a Natural Conditions Assessment was performed and Harris Swamp and its tributaries from its confluence with the Nottoway River to river mile 8.72 were proposed for reclassification as Class VII swampwaters. Until the WQS can be revised, the segment must be assessed against the current Class III criteria. The station 5AHR006.30 was considered impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 4/8 and a pH violation rate of 2/8. The segment will be classified as a Category 4C water.

Harris Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.23
Harris Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			3.23

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K19R-03-BAC** **Buckskin Creek**

Location: Buckskin Creek from its headwaters to its mouth at the Nottoway River.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The segment was previously assessed as not supporting the Recreation Use goal based on a fecal coliform violation rate of 3/12 at the Route 609 bridge (5ABSK004.32). No additional data was collected during the 2008 cycle, therefore the impairment is carried over.

Buckskin Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			11.84

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K19R-04-BAC** **Nottoway River - Upper**

Location: This cause encompasses the Upper portion of Nottoway River in watershed K30. Segment begins at upstream intersection with watershed boundary (NW of Delaware) downstream below Route 671.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data exceedances of the swimming criteria indicator (3 violates/ 25 obs) at Station 5ANTW0015.99.

Nottoway River - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			0.47

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K19R-04-HG** **Nottoway River**

Location: The Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributary Assamoosick Swamp.

City / County: Brunswick Co. Dinwiddie Co. Greenville Co. Southampton Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2008 cycle, the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributary Assamoosick Swamp was considered impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury. No more than two meals/month of largemouth bass, smallmouth bass, bowfin, redhorse sucker species, longnose gar, channel catfish, chain pickerel, or sunfish species are recommended.

The advisory was based on fish tissue exceedances of TSVs and TVs at several DEQ fish tissue monitoring stations.

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			110.68

Sources:

Atmospheric Deposition - Source Unknown
Toxics

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K19R-05-BEN** **Nottoway River, UT**

Location: An unnamed tributary (XEJ) of the Nottoway River in its entirety.

City / County: Greenville Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, the segment was assessed as impaired of the Aquatic Life Use due to an impaired benthic community at station 5AXEJ001.73 in 2001. The TMDL is due in 2020.

Nottoway River, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			2.75

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K19R-06-BEN** **Nottoway River**

Location: The Nottoway River from Buckskin Creek downstream to the confluence with an unnamed tributary located near the Dinwiddie/Sussex Co. line

City / County: Brunswick Co. Dinwiddie Co. Greenville Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

This segment of the Nottoway River was assessed as impaired of the Aquatic Life Use during the 2008 cycle due to benthic monitoring in Fall 2003 at freshwater probabilistic station 5ANTW097.27.

Nottoway River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			1.04

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K20R-01-DO**

Butterwood Creek, White Oak Swamp, Rocky Run & Reedy Creeks

Location: Butterwood Creek and the following tributaries:
White Oak Swamp, Reedy Creek, Rocky Run Creek

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

The mainstems of White Oak Swamp and Butterwood Swamp were initially listed as fully supporting but threatened for dissolved oxygen in the 1998 cycle. Station 5ABTR002.80 (Route 646 bridge) was identified to Virginia for listing consideration because of dissolved oxygen.

During the year 2002 cycle, the segment was assessed partially supporting of the Aquatic Use because of pH violations (5ABTR002.80). The DO violation rate at this station was acceptable (3/38), but due to DO violations throughout the watershed (see below) the segment was extended to include Reedy Creek and Rocky Run Creek. The entire segment was listed for both pH and dissolved oxygen. The impairment was continued in the 2004 cycle.

During the 2006 cycle, two Natural Conditions Assessment studies were performed. The results of the monitoring and study indicated that all creeks should be delisted except for:

Butterwood Creek (DO) from rivermile 14.59 to 4.65; recommended for Class VII
Cooks Branch (pH) from rivermile 1.08 to 0.00; recommended for Class VII
White Oak Swamp (DO/pH) at the headwaters; recommended for cat 4C

The segments will remain Category 4C for dissolved oxygen until the swampwater WQS can be developed.

Butterwood Creek, White Oak Swamp, Rocky Run & Reedy Creeks

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Oxygen, Dissolved - Total Impaired Size by Water Type:

10.73

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K20R-01-PH** **Butterwood Creek, White Oak Swamp, Rocky Run & Reedy Creeks**

Location: Butterwood Creek and the following tributaries:
White Oak Swamp, Reedy Creek, Rocky Run Creek

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

The mainstems of White Oak Swamp and Butterwood Swamp were initially listed as fully supporting but threatened for dissolved oxygen in the 1998 cycle. Station 5ABTR002.80 (Route 646 bridge) was identified to Virginia for listing consideration because of dissolved oxygen.

During the year 2002 cycle, the segment was assessed partially supporting of the Aquatic Use because of pH violations (5ABTR002.80). The DO violation rate at this station was acceptable (3/38), but due to DO violations throughout the watershed (see below) the segment was extended to include Reedy Creek and Rocky Run Creek. The entire segment was listed for both pH and dissolved oxygen. The impairment was continued in the 2004 cycle.

During the 2006 cycle, two Natural Conditions Assessment studies were performed. The results of the monitoring and study indicated that all creeks should be delisted for pH except for Cooks Branch (pH) from rivermile 1.08 to 0.00 and the headwaters of White Oak Swamp, which were recommended for reclassification as a Class VII swampwater.

Butterwood Creek, White Oak Swamp, Rocky Run & Reedy Creeks	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			2.50

Sources:
Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K21R-02-DO** **Southwest Swamp**

Location: Southwest Swamp and its tributaries from its confluence with Stony Creek to river mile 8.55.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

During the 2008 cycle, Southwest Swamp and its tributaries from its confluence with Stony Creek to river mile 8.55 was proposed for reclassification as Class VII swampwaters. Both stations were assessed as Not Supporting of the Aquatic Life Use due to dissolved oxygen violations (3/8 at 5ASWT000.36 and 5/8 at 5ASWT005.11). The segment will be considered a Category 4C water until the new swampwater dissolved oxygen criteria can be developed.

Southwest Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			12.13

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K21R-02-PH** **Southwest Swamp**

Location: Southwest Swamp and its tributaries from its confluence with Stony Creek to river mile 8.55.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

During the 2008 cycle, Southwest Swamp and its tributaries from its confluence with Stony Creek to river mile 8.55 was proposed for reclassification as Class VII swampwaters. Both stations were assessed as Not Supporting of the Aquatic Life Use due to pH violations (7/8 at 5ASWT000.36 and 8/8 at 5ASWT005.11). The segment will be considered a Category 4C water until the WQS can be revised.

Southwest Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			12.13

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K22R-02-DO** **Horsepen Branch**

Location: Horsepen Branch from its headwaters downstream to its mouth at Mill Run Branch

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

Horsepen Branch was assessed as not supporting the Aquatic Life Use during the 2006 cycle due to dissolved oxygen violations at the Route 619 bridge (5AHSP000.38). During the 2008 cycle, the violation rate was 4/22.

Horsepen Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.90

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K22R-03-BAC** **Sappony Creek**

Location: Sappony Creek from its headwaters downstream to Spiers Pond.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The segment was assessed as impaired of the Recreation Use due to an E. coli violation rate of 3/12 at 5ASAP005.54 during the 2006 and 2008 cycles. The E. coli rate at 5ASAP013.69 was acceptable.

Sappony Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			20.21

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-01-DO**

Rowanty Creek and tribs; Gosee Swamp and tribs

Location: The entire Rowanty Creek and Gosee Swamp watersheds.

City / County: Dinwiddie Co. Prince George Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

The entire Rowanty Creek watershed has previously been assessed not supporting of the Aquatic Life use support goal based on DO and pH violations at 5AHRA010.94, 5AROW013.14, and 5AROW002.41 and DO, pH violations in 1994 at 5APCT001.23, 5AGRV006.00, 5AGRV004.35, 5AHRA010.94, 5AHRA003.42, 5AHRA002.92, 5AATH003.28, 5ALCC000.54, 5AROW008.64, and 5AROW004.72.

During the 2006 cycle, the lower portion of the Rowanty Creek watershed below Gravelly Run was reclassified as Class VII swampwaters. That segment was now in conformance with the pH and DO standards and was delisted. However, the upper Class III portion still had pH and DO violations at 5AATH003.28 and 5AHRA010.94 and remained impaired.

During the 2008 cycle, additional monitoring was conducted in the watershed as part of a Natural Conditions Assessment. Gravelly Run and its tributaries from its mouth upstream to river mile 8.56 and Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, were recommended for reclassification as Class VII swampwater. The segments will be considered Category 4C for pH until the WQS can be revised.

The majority of segments remain impaired of the dissolved oxygen standard, but will be classified as Category 4C until the swampwater DO standard can be developed. Picture Branch is a Class III waters, but was delisted because station 5APCT001.23 has an acceptable DO violation rate.

The Gosee Swamp watershed was assessed as not supporting of the Aquatic Life use because of a DO violation rate of 2/2 and a pH 2/2 at 5AGSE001.35 during the 1998 cycle.

During the 2008 cycle, Gosee Swamp and its tributaries from its confluence with the Nottoway River to rivermile 6.88 was reclassified as Class VII swampwater. Monitoring at stations 5AGSE001.35 and 5AGSE003.12 showed that the pH was within the Class VII WQS and the segment will be delisted for pH. The segment will remain impaired for dissolved oxygen until the Class VII DO criteria can be developed. The segment was shortened to match the Class VII designation.

Rowanty Creek and tribs; Gosee Swamp and tribs

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Oxygen, Dissolved - Total Impaired Size by Water Type:

99.43

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-01-PH**

Rowanty Creek and tribs; Gosee Swamp and tribs

Location: The entire Rowanty Creek and Gosee Swamp watersheds.

City / County: Dinwiddie Co. Prince George Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: pH / 4C

The entire Rowanty Creek watershed has previously been assessed not supporting of the Aquatic Life use support goal based on DO and pH violations at 5AHRA010.94, 5AROW013.14, and 5AROW002.41 and DO, pH violations in 1994 at 5APCT001.23, 5AGRV006.00, 5AGRV004.35, 5AHRA010.94, 5AHRA003.42, 5AHRA002.92, 5AATH003.28, 5ALCC000.54, 5AROW008.64, and 5AROW004.72.

During the 2006 cycle, the lower portion of the Rowanty Creek watershed below Gravelly Run was reclassified as Class VII swampwaters. That segment was now in conformance with the pH and DO standards and was delisted. However, the upper Class III portion still had pH and DO violations at 5AATH003.28 and 5AHRA010.94 and remained impaired.

During the 2008 cycle, additional monitoring was conducted in the watershed as part of a Natural Conditions Assessment. Gravelly Run and its tributaries from its mouth upstream to river mile 8.56 and Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, were recommended for reclassification as Class VII swampwater. The segments will be considered Category 4C for pH until the WQS can be revised.

The majority of segments remain impaired of the dissolved oxygen standard, but will be classified as Category 4C until the swampwater DO standard can be developed. Picture Branch will remain a Class III waters, but was delisted because station 5APCT001.23 has an acceptable pH violation rate.

The Gosee Swamp watershed was assessed as not supporting of the Aquatic Life use because of a DO violation rate of 2/2 and a pH 2/2 at 5AGSE001.35 during the 1998 cycle.

During the 2008 cycle, Gosee Swamp and its tributaries from its confluence with the Nottoway River to rivermile 6.88 were recommended as Class VII swampwaters. Monitoring at stations 5AGSE001.35 and 5AGSE003.12 showed that the segment will remain impaired for dissolved oxygen and pH until the WQS can be revised. The segment was shortened to match the Class VII recommendation.

Rowanty Creek and tribs; Gosee Swamp and tribs

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

pH - Total Impaired Size by Water Type:

99.43

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-03-BAC** **Nebletts Mill Run, UT**

Location: An unnamed tributary (XDV) of Nebletts Mill Run.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Nebletts Run from the Millpond downstream to the mouth and Tributary XDV had been considered not supporting of the Recreation Use. During the 2006 cycle, the fecal coliform violation rate at 5ANBT001.26 was acceptable (2/19), therefore Nebletts Mill Run was delisted. Tributary XDV continued to be impaired with a fecal coliform instantaneous violation rate of 10/17 and an E. coli violation rate of 2/2. The bacteria TMDL is due in 2016. No new bacteria data were collected in the 2008 cycle. The impairment converted to E. coli during the 2008 cycle.

Nebletts Mill Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			1.73

Sources:

Animal Feeding Operations Source Unknown
(NPS)

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-03-DO** **Nebletts Mill Run and all its tributaries**

Location: The entire Nebletts Mill Run watershed.

City / County: Prince George Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Mainstem Nebletts Mill Run watershed has been impaired of the Aquatic Life Use due to pH and dissolved oxygen impairments. This segment was expanded in 2002 to include the entire watershed. The TMDL for Nebletts Mill Run downstream of the Millpond was due in 2010, the TMDL for the tributaries was due in 2014.

During the 2006 cycle, the watershed was reclassified a Class VII swampwater. The watershed was now in conformance with pH standards for swampwater and was delisted for pH. However, a DO criteria specific for swampwater has not been developed yet, and the watershed will remain impaired of the DO criteria, but will be assessed as a category 4C water.

Nebletts Mill Run and all its tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			42.46

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-04-DO** **Jones Hole Swamp and all its tributaries**

Location: Jones Hole Swamp and tributaries from the mouth at the Nottoway River to their headwaters.

City / County: Prince George Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

During the 2008 cycle, a Natural Conditions Assessment was developed and Jones Hole Swamp and tributaries from their confluence with the Nottoway River to their headwaters was recommended for reclassification as Class VII swampwater. The segment was assessed as impaired of the Aquatic Life Use due to dissolved oxygen violations at monitoring stations 5AJNH001.73, 5AJNH004.42, and 5AJNH007.30. The segment will be considered a Category 4C water until the swampwater DO criteria can be developed.

Jones Hole Swamp and all its tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			46.19

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-04-PH** **Jones Hole Swamp and all its tributaries**

Location: Jones Hole Swamp and tributaries from the mouth at the Nottoway River to their headwaters.

City / County: Prince George Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

During the 2008 cycle, a Natural Conditions Assessment was developed and Jones Hole Swamp and tributaries from their confluence with the Nottoway River to their headwaters was recommended for reclassification as Class VII swampwater. The segment was assessed as impaired of the Aquatic Life Use due to pH violations at monitoring stations 5AJNH001.73, 5AJNH004.42, and 5AJNH007.30. The segment will be considered a Category 4C water until the WQS can be revised.

Jones Hole Swamp and all its tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			46.19

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-05-BAC** **Hatcher Run**

Location: Hatcher Run from its headwaters to the pond below Rt. 627

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

This segment of Hatcher Run is considered not supporting the Recreation Use based on a fecal coliform violation rate of 2/3 during the 2004 cycle at the USGS monitoring station at the Route 627 bridge (02046265).

Hatcher Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			4.36

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-06-BAC** **Arthur Swamp**

Location: The mainstem of Arthur Swamp.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2008 cycle, Arthur Swamp was assessed as impaired of the Recreation Use due to an E. coli violation rate of 2/16 at 5AATH003.28, which is located at the Route 675 bridge.

Arthur Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			8.50

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-07-DO** **Black Branch Swamp**

Location: The mainstem of Black Branch Swamp from its headwaters to its mouth at the Nottoway River.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

During the 2008 cycle, Black Swamp from its confluence with the Nottoway River to its headwaters was proposed for reclassification as Class VII swampwaters. Monitoring at station 5ABBS003.46 shows that the station was considered impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 4/8. The segment will be classified as Category 4C until the swampwater DO standard can be developed.

Black Branch Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			6.26

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-07-PH** **Black Branch Swamp**

Location: The mainstem of Black Branch Swamp from its headwaters to its mouth at the Nottoway River.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

During the 2008 cycle, Black Swamp from its confluence with the Nottoway River to its headwaters was proposed for reclassification as Class VII swampwaters. Monitoring at station 5ABBS003.46 shows that the station was considered impaired of the Aquatic Life Use due to a pH violation rate of 4/8. The segment will be classified as Category 4C until the Water Quality Standards can be revised.

Black Branch Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			6.26

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-08-DO** Cabin Point Swamp

Location: The mainstem of Cabin Point Swamp from its headwaters to its mouth at the Nottoway River.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

During the 2008 cycle, Cabin Point Swamp from its confluence with the Nottoway River to its headwaters was proposed for reclassification as Class VII swampwaters. Monitoring at stations 5ACBP000.96 and 5ACBP004.50 shows that the segment was considered impaired of the Aquatic Life Use due to dissolved oxygen violation rates of 4/8. The segment will be classified as Category 4C until the swampwater DO standard can be developed.

Cabin Point Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			6.28

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-08-PH** Cabin Point Swamp

Location: The mainstem of Cabin Point Swamp from its headwaters to its mouth at the Nottoway River.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

During the 2008 cycle, Cabin Point Swamp from its confluence with the Nottoway River to its headwaters was proposed for reclassification as Class VII swampwaters. Monitoring at stations 5ACBP000.96 and 5ACBP004.50 shows that the segment was considered impaired of the Aquatic Life Use due to pH violation rates of 1/8 and 5/8, respectively. The segment will be classified as Category 4C until the WQS can be revised.

Cabin Point Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			6.28

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K23R-09-PH** **XFZ - Nebletts Mill Run, UT**

Location: Headwaters to mouth at Nebletts Mill Run

City / County: Prince George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2008 cycle, UT XFZ from its mouth at Nebletts Mill Run to its headwaters was considered impaired of the Aquatic Life Use due to a pH violation rate of 2/2 at 5AXFZ000.38. The segment is designated a Class VII water, however the pH measurements were below the current Class VII criteria of 4.3, therefore the segment will be considered Category 5C until the WQS can be revised to lower the natural swampwater pH criteria.

XFZ - Nebletts Mill Run, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			1.41

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K24R-01-DO** **Hunting Quarter Swamp**

Location: Hunting Quarter Swamp from its headwaters to its mouth at the Nottoway River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Hunting Quarter Swamp had been assessed as fully supporting but threatened of the Aquatic Life Use since the 1998 cycle based on best professional judgment. Because of its hydrological characteristics, Hunting Quarter Swamp was believed to be subject to the same dissolved oxygen and pH characteristics as other swampwaters assessed as less than fully supporting of its use support goal.

Sampling in the 2004 cycle confirmed the pH violations (2/2), therefore the segment was downgraded to impaired. Although the DO violation rate was acceptable (0/2), the samples were taken in the winter months and therefore dissolved oxygen was still added as an impairing cause based on BPJ.

However, during the 2006 cycle, additional monitoring was conducted. This confirmed the pH violations (5/5), but the DO violation rate was acceptable (0/5). The segment was delisted for dissolved oxygen.

During the 2008 cycle, Hunting Quarter Swamp and its tributaries from its confluence with the Nottoway River to its headwaters were reclassified as Class VII swampwaters. Sampling at stations 5AHQS003.38, 5AHQS006.22, 5AHQS009.57, 5AHQS012.22, and 5AHQS016.07 showed that the segment is subject to low dissolved oxygen and the segment will be assessed as impaired of the Aquatic Life Use and classified as Category 4C for DO until the swampwater standard can be developed.

Hunting Quarter Swamp

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Oxygen, Dissolved - Total Impaired Size by Water Type:

16.20

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K24R-01-PH** **Hunting Quarter Swamp**

Location: Hunting Quarter Swamp from its headwaters to its mouth at the Nottoway River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

Hunting Quarter Swamp had been assessed as fully supporting but threatened of the Aquatic Life Use since the 1998 cycle based on best professional judgment. Because of its hydrological characteristics, Hunting Quarter Swamp was believed to be subject to the same dissolved oxygen and pH characteristics as other swampwaters assessed as less than fully supporting of its use support goal.

Sampling in the 2004 cycle confirmed the pH violations (2/2), therefore the segment was downgraded to impaired.

During the 2008 cycle, a Natural Conditions Assessment report was performed. Hunting Quarter Swamp and its tributaries from its confluence with the Nottoway River to its headwaters were recommended for reclassification as Class VII swampwaters. The segment will be considered Category 4C for pH until the WQS can be developed.

Hunting Quarter Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			16.20

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K24R-02-DO** **Hunting Quarter Swamp Tributaries**

Location: All tributaries to Hunting Quarter Swamp. Includes Anderson Branch, Lees Branch, and Thweatt Branch.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

During the 2008 cycle, Hunting Quarter Swamp and its tributaries from its confluence with the Nottoway River to its headwaters were reclassified as Class VII swampwaters. Monitoring at stations 5AAND000.10, 5AAND004.57, 5ALEE000.73, and 5ATWT001.19 showed that the tributaries have depressed dissolved oxygen levels. The tributaries will be considered Category 4C waters until the swampwater dissolved oxygen standard can be developed.

Hunting Quarter Swamp Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			34.95

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K24R-02-PH** **Hunting Quarter Swamp Tributaries**

Location: All tributaries to Hunting Quarter Swamp. Includes Anderson Branch, Lees Branch, and Thweatt Branch.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

During the 2008 cycle, Hunting Quarter Swamp and its tributaries from its confluence with the Nottoway River to its headwaters were recommended for reclassification as Class VII swampwaters. Monitoring at stations 5AAND000.10, 5AAND004.57, 5ALEE000.73, and 5ATWT001.19 showed that the tributaries have depressed pH levels. The tributaries will be considered Category 4C waters until the WQS can be revised.

Hunting Quarter Swamp Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			34.95

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K24R-03-BAC** **Hunting Quarter Swamp**

Location: The mainstem of Hunting Quarter Swamp.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2008 cycle, Hunting Quarter Swamp was assessed as impaired of the Recreation Use due to an E. coli violation rate of 2/14 at the Route 642 bridge (5AHQS006.22).

Hunting Quarter Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			16.20

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K25R-01-DO** **Raccoon Creek, Spring Creek**

Location: The entire mainstems of Raccoon Creek and Spring Creek.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

In 1998 Raccoon Creek was assessed as impaired (Part V) of the Aquatic Life Use based on sampling at the Route 608 bridge (5ARCN003.36) and the results of a 1994 special study. Spring Creek was considered fully supporting but threatened. EPA overlisted both segments for DO and pH.

During the year 2006 cycle, Raccoon Creek and its tributaries were reclassified as Class VII swampwaters. Raccoon Creek and Spring Creek were now in conformance with the pH standards for swampwaters and the segment was delisted for pH. However, the DO criteria for swampwater is still under development and the segment are still impaired for DO and remain classified as Cat. 4C.

Raccoon Creek, Spring Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			35.61

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K25R-02-BAC** **Raccoon Creek**

Location: The entire mainstem of Raccoon Creek.

City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

The segment was initially listed as fully supporting but threatened of the Recreation use goal during the 1998 303(d) cycle. It was then identified to Virginia for listing consideration. During the 2002 303(d) cycle the segment was downgraded to impaired, therefore the TMDL was due in 2010. During the year 2006 cycle, the segment remained not supporting of the Recreation goal based on a fecal coliform violation rate of 6/31 at the Route 608 bridge (5ARCN003.36), however the TMDL was completed as part of the Chowan River Bacteria TMDL. The TMDL was approved by EPA on 10/14/2005. The segment should be considered Category 4A.

During the 2008 cycle, the impairment converted to E. coli and the segment remained impaired with an E. coli violation rate at station 5ARCN003.36 of 4/20. However, an upstream station at 5ARCN012.80 had an acceptable violation rate (1/12.)

Raccoon Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			19.34

Sources:

Non-Point Source

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K25R-03-DO** **UT to Spring Creek**

Location: Tributary XFB from its headwaters to its mouth at Spring Creek

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

During the year 2006 cycle, Raccoon Creek and its tributaries were reclassified as Class VII swampwaters. However, the DO criteria specific for swampwater is still under development and station 5AXFB000.77 had a DO violation rate of 5/14 and is considered impaired for DO and classified as Cat. 4C.

UT to Spring Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			4.09

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K25R-04-DO** **Little Swamp**

Location: Little Swamp from its headwaters to its mouth at Raccoon Creek

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

During the year 2006 cycle, Raccoon Creek and its tributaries were reclassified as Class VII swampwaters. However, the DO criteria specific for swampwater is still under development. The segment is considered impaired for DO and classified as Cat. 4C based on a DO violation rate of 2/14 at stations 5ALTS001.56 and 5ALTS006.11, which are located at Rt. 631/Peters Bridge Road and Rt. 735 respectively.

Little Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			8.41

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K25R-05-DO** **UT to Raccoon Creek**

Location: Headwaters to its mouth at Raccoon Creek

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

During the 2006 cycle, Raccoon Creek and its tributaries were reclassified as Class VII swampwaters. The specific swampwater DO standard has not been developed yet, therefore the segment is considered impaired for DO, but is listed as Cat. 4C.

UT to Raccoon Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			4.30

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K25R-05-PH** **UT to Raccoon Creek**

Location: Headwaters to its mouth at Raccoon Creek

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2006 cycle, Raccoon Creek and its tributaries were reclassified as Class VII swampwaters. Although the swampwater pH criteria had been lowered to 4.3 SU, the tributary was still considered impaired of the Aquatic Life Use with pH as low as 4.1 SU. Although believed to be natural, the segment was assessed as category 5C.

UT to Raccoon Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			4.30

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K26R-01-DO** Otterdam Swamp, Three Creek

Location: Otterdam Swamp from Hickory Swamp to its mouth, and Three Creek from the Slagles Lake Dam downstream to Browns Branch.

City / County: Greensville Co. Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

Otterdam Swamp from Hickory Swamp to its mouth, and Three Creek from Otterdam Swamp to Browns Branch were assessed not supporting of the Aquatic Life use support goal based on a dissolved oxygen violation rate of 2/11 at 5ATRE022.05.

During the 2006 cycle, Three Creek and its tributaries were reclassified as Class VII swampwaters and the pH criteria was adjusted. The DO impairment will be assessed as Cat. 4C impairment. The segment was no longer impaired for pH at 5ATRE022.05, therefore the segment was delisted for pH in the 2006 cycle.

Otterdam Swamp, Three Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			12.85

Sources:

Dam or Impoundment
Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K26R-02-BAC** **Three Creek**

Location: From Otterdam Swamp downstream to Browns Branch. Nested in segment VAP-K26R-01.

City / County: Greenville Co. Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the year 2006 cycle, the segment was assessed not supporting of the Recreation use support goal based on E. coli violations at the Route 615 bridge (5ATRE022.05).

Three Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			6.46

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K26R-03-BAC** **Three Creek**

Location: Three Creek from Cattail Creek downstream to Slagles Dam.

City / County: Greenville Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

During the 2008 cycle, the segment was assessed as not supporting of the Recreation Use based on an E. coli violation rate of 2/10 at the Route 610 bridge (5ATRE038.07).

Three Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			4.30

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K27R-02-BAC** **Three Creek - Lower**

Location: This cause encompasses the lower portion of Three Creek from area of Southampton Correctional Center at Rt 308 crossing (RM 10.04) downstream to confluence with Nottoway River (RM 0.00).

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The Recreational Use is impaired based on the E Coli data exceedance of the swimming criteria indicator (4 violates/ 26 obs) at Station 5ATRE008.48.

Three Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			10.38

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K27R-03-BEN** **Applewhite Swamp**

Location: This cause encompasses the area from the start of swamp (near Harrells Mill) downstream to confluence with Three Creek.
Located south of Mason & northeast of Arringdale.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic population rating from the. Benthic ProbMon-Benthic IM [MI:S&F-'01,S&F-'02].

Applewhite Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			7.77

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K27R-05-BAC** **Three Creek - Upper**

Location: This cause encompasses the area from the confluence of Chatman Branch (RM 20.95) downstream to above Southampton Correctional Farm at Rt 308 crossing (RM 10.04).

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreational Use is impaired based on the E.Coli data exceedance of the swimming criteria indicator at Station 5ATRE016.02 with 3 violates/ 27 obs.

Three Creek - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			8.85

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K27R-05-BEN** **Three Creek - Upper**

Location: This cause encompasses the area from the confluence of Chatman Branch (RM 20.95) downstream to above Southampton Correctional Farm at Rt 308 crossing (RM 10.04).

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the stream benthic monitoring assessment rating as indicated in the following sample event (MI in Spring-'00,Fall-'04].

Three Creek - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			8.85

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K28R-01-BAC** **Mill Swamp**

Location: This cause encompasses the Main stem of Mill Swamp only, from headwaters downstream to the confluence with the Nottoway River. Tributary to Nottoway R, downstream of PWS. W of Delaware.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreational Use is impaired based on the 06 Assessment of the Fecal Coliform data. No new data was collected for this assessment for E.coli.

Mill Swamp	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Fecal Coliform - Total Impaired Size by Water Type:			10.19

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K28R-01-DO** **Mill Swamp**

Location: This cause encompasses the Main stem of Mill Swamp only, from headwaters downstream to the confluence with the Nottoway River. Tributary to Nottoway R, downstream of PWS. W of Delaware.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the dissolved oxygen exceedances of the criteria for this parameter (3 violates/ 12 obs).

Mill Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			10.19

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K28R-02-BEN** **Buckhorn Swamp**

Location: This cause encompasses the segment of Buckhorn Swamp that is near Pope Count, segment is located between State Hwy 652 and US Hwy 58. Segment ends below State Hwy 657.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic population rating from the Benthic ProbMon-sample events [MI:F-'06, VI:S-'06,] at Station 5ABKH005.16.

Buckhorn Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			5.67

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K29R-01-BAC** **Assamoosick, Seacorrie, German, Pigeon Swamps**

Location: Assamoosick Swamp, Seacorrie Swamp, German Swamp, Pigeon Swamp, Black Swamp, and UT to Assamoosick Swamp
XDW and UT to Seacorrie Swamp XDX.

City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

In 1998, the entire mainstem of Assamoosick Swamp (23.8 miles) was assessed fully supporting but threatened of the Recreation Use. The segment was later identified to Virginia for listing consideration (station 5AASM013.36). The segment was downgraded in 2002, therefore the TMDL is due in 2010. In 2002 Black Swamp, Seacorrie Swamp, XDW, and XDX were also considered impaired of the Recreation Use. These TMDLs are due in 2014. In 2004, German Swamp was added to the impairment. This TMDL is due in 2016. During the 2006 cycle, several E. coli impairments were added in the watershed; these bacteria impairments have the same TMDL due date as the original FC impairments.

Note: the fecal coliform impairment of Assamoosick Swamp was shortened in the year 2002 cycle to end at the Route 607 bridge. There continues to be acceptable fecal coliform levels in this downstream portion (0/3 at 5AASM003.00, 0/13 at 5AASM000.89).

Assamoosick, Seacorrie, German, Pigeon Swamps

Recreation

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

10.43

Assamoosick, Seacorrie, German, Pigeon Swamps

Recreation

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

23.17

Sources:

Animal Feeding Operations
(NPS)

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K29R-01-DO** **Assamoosick, Seacorrie, German, Pigeon Swamps**

Location: Assamoosick Swamp, Seacorrie Swamp, German Swamp, Pigeon Swamp, Black Swamp, and UT to Assamoosick Swamp
XDW and UT to Seacorrie Swamp XDX.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Assamoosick Swamp, Seacorrie Swamp, German Swamp, and Pigeon Swamp were originally listed as impaired of the Aquatic Life Use in 1998 based on pH and DO violations throughout the watershed. Station 5AASM008.12 was later mistakenly listed on EPA's "Waters Identified to Virginia for Listing Consideration During Development of the Next List" for pH even though the segment was already 303(d) listed. The pH and DO TMDLs for these creeks are due in 2010.

In the year 2002 cycle, Black Swamp and UT to Assamoosick Swamp XDW were added for DO and pH, and UT to Seacorrie Swamp XDX was added for DO. These TMDLs are due in 2014.

During the year 2006 cycle, the watershed was reclassified as Class VII swampwaters. All segments are assessed as Cat. 4C for DO until the DO swampwater criteria can be developed.

Assamoosick, Seacorrie, German, Pigeon Swamps	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			45.19

Sources:

Animal Feeding Operations (NPS)	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K29R-01-NH3** **UT to Seacorrie Swamp**

Location: In the year 2002 cycle, UT to Seacorrie Swamp XDX was assessed as impaired of the Wildlife and Aquatic Life Uses due to ammonia violations. The TMDL is due in 2014. Although there were no exceedances of the acute criteria during the 2006 or 2008 cycles, there were 2 exceedances of the chronic criteria, therefore the segment will remain listed.

City / County: Sussex Co.

Use(s): Aquatic Life Wildlife

Cause(s) /
VA Category: Ammonia (Un-ionized) / 5A

In the year 2002 cycle, UT to Seacorrie Swamp XDX was assessed as impaired of the Wildlife and Aquatic Life Uses due to ammonia violations. The TMDL is due in 2014. Although there were no exceedances of the acute criteria during the 2006 or 2008 cycles, there were 2 exceedances of the chronic criteria, therefore the segment will remain listed.

UT to Seacorrie Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Wildlife			
Ammonia (Un-ionized) - Total Impaired Size by Water Type:			2.92

Sources:

Animal Feeding Operations Source Unknown
(NPS)

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K29R-01-PH**

Assamoosick, Seacorrie, German, Pigeon Swamps

Location: Assamoosick Swamp, Seacorrie Swamp, German Swamp, Pigeon Swamp, Black Swamp, and UT to Assamoosick Swamp XDW and UT to Seacorrie Swamp XDX.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: pH / 5C

Assamoosick Swamp, Seacorrie Swamp, German Swamp, and Pigeon Swamp were originally listed as impaired of the Aquatic Life Use in 1998 based on pH and DO violations throughout the watershed. Station 5AASM008.12 was later mistakenly listed on EPA's "Waters Identified to Virginia for Listing Consideration During Development of the Next List" for pH even though the segment was already 303(d) listed. The pH and DO TMDLs for these creeks are due in 2010.

In the year 2002 cycle, Black Swamp and UT to Assamoosick Swamp XDW were added for DO and pH, and UT to Seacorrie Swamp XDX was added for DO. These TMDLs are due in 2014.

During the year 2006 cycle, the watershed was reclassified as Class VII swampwaters. All creeks within the watershed except for German Swamp now met the pH criteria and were delisted for pH. German Swamp had pH values below the allowable 4.3 SU. Although the exceedances are believed to be caused by natural conditions, the segment remained classified as Cat. 5C.

Assamoosick, Seacorrie, German, Pigeon Swamps

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

pH - Total Impaired Size by Water Type:

3.65

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K30R-01-BAC** **Darden Mill Run**

Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near VA/NC state line.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreational Use is impaired based on E.coli exceedance of the swimming criteria indicator with 8 violates/24 obs for station 5ADMR008.42.

Darden Mill Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			10.37

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K30R-01-DO** **Darden Mill Run**

Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the depressed DO concentrations below the criteria minimum. Impairment is suspected due to natural swamp conditions present in these waters. Station 5ADMR008.42 exceedance rate is 10 violates/35 obs for DO.

Darden Mill Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			10.37

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K30R-01-PH** **Darden Mill Run**

Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use is impaired based on the depressed pH concentrations below the criteria minimum. pH values exceed 14 violates/ 34 obs.

Darden Mill Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			10.37

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K31R-01-BAC** **Blackwater Swamp, Warwick Swamp**

Location: Blackwater Swamp and Warwick Swamp from their headwaters to the Blackwater River.

City / County: Dinwiddie Co. Petersburg City Prince George Co. Surry Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

In the 1998 cycle, Warwick Swamp from its headwaters to the Route 627 bridge was assessed fully supporting but threatened of the Recreation use. During the year 2002 cycle, the entire mainstems of Warwick Swamp and Blackwater Swamp were considered impaired of the Recreation use. Due to an acceptable fecal coliform violation rate at 5AWKS001.00, the Warwick Swamp segment was shortened to its original length in 2004. During the 2006 cycle, there was no additional monitoring at 5AWKS009.11, therefore the impairment was carried over.

During the 2008 cycle, the impairment converted to E. coli with violation rates of 2/9 at 5ABKR003.68 and 5AWKS009.11. The bacteria TMDL is due in 2014.

Blackwater Swamp, Warwick Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			35.42

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K31R-01-DO**

Blackwater Swamp, Warwick Swamp

Location: Blackwater Swamp and Warwick Swamp from their headwaters to the Blackwater River.

City / County: Dinwiddie Co.

Petersburg City

Prince George Co.

Surry Co.

Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Blackwater Swamp and Warwick Swamp were originally assessed as impaired of the Aquatic Life Use in 1998 due to DO and pH violations. During the year 2004 cycle, the impairment was continued due to widespread violations:

DO 9/20, pH 7/20 at the Rt. 625 bridge (5ABKR003.68).

DO 3/10 at the Rt. 627 bridge (5AWKS009.11);

1994-1995 exceedances:

DO 1/2, pH 1/2 at Rt. 625 bridge (5AWKS006.46);

DO 1/2, pH 1/2 at Rt. 624 bridge (5AWKS003.66);

DO 1/2, pH 2/2 at Rt. 460 bridge (5AWKS002.12);

DO 5/7, pH 3/7 at Rt. 613 bridge (5AWKS001.00).

During the 2006 cycle, the entire watershed was reclassified as Class VII swampwaters. The streams were now in compliance with the pH standard and were delisted for pH. The streams are still impaired for DO, but should be assessed as Cat. 4C until the swampwater-specific DO criteria can be developed.

Blackwater Swamp, Warwick Swamp

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Oxygen, Dissolved - Total Impaired Size by Water Type:

44.26

Sources:

Natural Conditions - Water

Quality Standards Use

Attainability Analyses

Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K31R-02-BAC** **Second Swamp**

Location: Second Swamp from its headwaters to its mouth at Blackwater Swamp.

City / County: Petersburg City Prince George Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

Second Swamp was initially assessed as not supporting the Recreation Use support goal in 2004 based on a fecal coliform violation rate of 2/12 at the Route 618 bridge (5ASEC001.11).

No additional monitoring has been collected in the 2008 cycle, therefore the impairment is carried over.

Second Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			15.24

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K31R-02-DO** **Second Swamp**

Location: Second Swamp from its headwaters to its mouth at Blackwater Swamp.

City / County: Petersburg City Prince George Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

Second Swamp was assessed as not supporting the Aquatic Life support goal based on dissolved oxygen violations at the Route 618 bridge (5ASEC001.11).

The segment is classified as a Class VII swampwater, therefore the dissolved oxygen impairment is considered Cat. 4C until the DO criteria for swampwater can be developed.

Second Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			15.24

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K31R-03-PH** **XES - Warwick Swamp, UT**

Location: An unnamed tributary from its headwaters to its mouth at Warwick Swamp.

City / County: Dinwiddie Co. Petersburg City Prince George Co. Surry Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The watershed was reclassified as Class VII waters during the 2006 cycle. However, during the 2008 cycle, the tributary was assessed as not supporting of the Aquatic Life Use due to two violations of the 4.3 Class VII pH standard at the Route 622 bridge (5AXES003.11). The violations are believed to be natural conditions, but until the WQS can be revised the segment is considered Category 5C.

XES - Warwick Swamp, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			3.37

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-01-BAC** **Blackwater River**

Location: Blackwater River from Warwick Swamp to Cypress Swamp

City / County: Surry Co. Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Blackwater River from Warwick Swamp to Cypress Swamp was initially assessed as not supporting of the Recreation Use during the 2002 cycle based on fecal coliform violations at 5ABW074.66. During the 2006 cycle, the fecal coliform violation rate was acceptable, however the segment was considered impaired for E. coli based on violations at 5ABW074.66 and downstream station 5ABW058.22. The FC impairment was changed to E. coli, and the original TMDL due date was maintained. During the 2008 cycle, the segment remained impaired with an E. coli violation rate of 5/21 at 5ABW074.66. The bacteria TMDL is due in 2010 because it was identified for listing consideration by EPA in 1998.

Blackwater River	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			23.56

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-01-DO** **Blackwater River**

Location: Blackwater River from Warwick Swamp to Cypress Swamp

City / County: Surry Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

This segment was originally assessed not supporting of the Aquatic Life Use goal in 1998 based on violations at the following stations:
Rt. 40 bridge (5ABLW074.66)
Rt. 617 bridge (5ABLW058.22)
1994 stations:
5ABLW087.70;
5ABLW069.30;
5ABLW064.46.

During the 2006 cycle, the segment was reclassified as Class VII swampwaters and the pH criteria was adjusted. The segment was now in compliance with the pH criteria and was delisted. The DO criteria has not been developed yet, therefore the segment will be assessed as Cat. 4C for DO.

Blackwater River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			23.56

Sources:
Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-02-BEN** **Spring Branch**

Location: From the old Borden Chemical/Spurlock Adhesives discharge to the confluence with the Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

Spring Branch was initially assessed as impaired of the Aquatic Life Use due to a severely impaired benthic community in the 1994 cycle.

There are six biological monitoring stations on Spring Branch. 5ASRN003.82 is located upstream of all the discharges; 5ASRN003.69 is located 50 yards below the Route 460 bridge; 5ASRN001.99 and 5ASRN001.90 are located upstream and downstream of Rt. 653; 5ASRN001.24 is located 100 yards below the Sussex Service Authority's Spring Branch WWTF discharge; and 5ASRN000.65 is located downstream of Bryant's Pond, near the mouth of Spring Branch. The three downstream stations rated moderately to severely impaired during the 2008 cycle.

The benthic TMDL was completed during the 2008 cycle. It received approval by EPA on 5/10/2006 and from the SWCB on 9/7/2006. The results indicated that total phosphorus is the Most Probable Stressor for Spring Branch because of its relationship to low dissolved oxygen and high pH. Total phosphorus was therefore used to develop the benthic TMDL.

Spring Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			3.81

Sources:		
Industrial Point Source Discharge	Municipal Point Source Discharges	Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-02-PH** **Spring Branch**

Location: From the old Borden Chemical/Spurlock Adhesives discharge to the confluence with the Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4A

The segment was considered impaired of the Aquatic Life Use in the 2008 cycle due to high pH at station 5ASRN000.66. The benthic TMDL for Spring Branch limits phosphorus input, which should reduce algal growth and lower the pH. The segment will be considered a Category 4A water for pH.

Spring Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			3.81

Sources:

Industrial Point Source Discharge	Municipal Point Source Discharges	Non-Point Source
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-03-DO** Otterdam Swamp

Location: Mainstem from its headwaters to its mouth.

City / County: Prince George Co. Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

Otterdam Swamp was assessed as not supporting of the Aquatic Life Use in 2002 based on numerous dissolved oxygen & pH water quality standard violations at confined animal feeding operation (CAFO) special study stations. The TMDLs were due in 2014. During the 2006 cycle, the watershed was reclassified as Class VII swampwater. The segment remains impaired for dissolved oxygen due to violations at 5AOTR001.26, 5AOTR004.31, and 5AOTR005.69, however it is assessed as Cat. 4C waters until the DO criteria for swampwater can be developed.

Otterdam Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			11.01

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-04-BAC** Otterdam Swamp

Location: Otterdam Swamp downstream of Averys Pond. Nested within segment VAP-K32R-03.

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The segment was initially assessed as not supporting of the Recreation Use goal during the 2002 cycle based on fecal coliform violations at 5AOTR001.26, 5AOTR004.31 (Rt. 607), and 5AOTR005.69 (Rt. 606). These are confined animal feeding operation (CAFO) special study stations.

E.coli was added as an impairing cause of the Recreation Use in 2006, however the original bacteria TMDL due date of 2014 was maintained. The bacteria impairment converted solely to E. coli during the 2008 cycle; the violation rates were 2/2 at 5AOTR004.31 and 3/10 at 5AOTR001.26.

Otterdam Swamp	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			5.57

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-05-BAC** **Coppahaunk Swamp and UT XDT**

Location: Mainstem from its headwaters to its mouth.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

Coppahaunk Swamp was initially assessed in 2002 as not supporting of the Recreation Use based on numerous fecal coliform violations. During the 2006 cycle, station 5AXDT000.50 had an E. coli violation rate of 2/2. E. coli was added as an impairing cause, and the initial bacteria TMDL due date of 2014 was maintained.

During the 2008 cycle, additional E. coli monitoring at station 5ACPH006.00 showed an acceptable violation rate (1/11), therefore the mainstem Coppahaunk Swamp was delisted for bacteria. This is a partial delist because the unnamed tributary to Coppahaunk Swamp, XDT, remains impaired.

Coppahaunk Swamp and UT XDT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			0.89

Sources:
Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-05-DO** Coppahaunk Swamp

Location: Mainstem from its headwaters to its mouth.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Coppahaunk Swamp was initially listed in 1998 as fully supporting but threatened for DO and pH and downgraded to impaired in 2002. The TMDLs are due in 2014. During the 2006 cycle, the stream was reclassified as Class VII waters and there were no violations for pH at any of the following stations:

5ACPH002.59 (Rt. 603)

5ACPH006.00 (Rt. 615)

5AXDT000.50 (UT XDT at Rt. 615)

5AXDU000.62 (UT XDU at Rt. 615)

The segment remains impaired for DO and assessed as a Cat. 4C water until the DO criteria for swampwater can be developed.

These are confined animal feeding operation (CAFO) special study stations.

Coppahaunk Swamp

Aquatic Life

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Oxygen, Dissolved - Total Impaired Size by Water Type:

13.40

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-06-DO** Cypress Swamp

Location: Mainstem from its headwaters to its mouth.

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

Cypress Swamp was initially listed as impaired in 1998 based on numerous current and historical dissolved oxygen and pH violations at two locations - the Route 31 bridge (5ACPP003.20) and the Route 616 bridge (5ACPP006.04). The TMDLs were due in 2010. Additional sampling has been done at 5ACPP007.84 and 5ACPP013.64.

During the 2006 cycle, the segment was reclassified as Class VII swampwaters. Cypress Swamp was now in conformance with the pH standard and was delisted. The segment remains impaired for DO, but is assessed as Cat. 4C waters until the swampwater DO criteria can be developed.

Cypress Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			16.35

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-07-BAC** Cypress Swamp Tributaries

Location: All tributaries to Cypress Swamp, including Johnchecohunk Swamp and Spring Grove Swamp

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

During 2006, station 5AJCH002.27 on Johnchecohunk Swamp had an E. coli violation rate of 2/12. In addition, the Cypress Swamp mainstem (VAP-K32R_CPP01A98) showed violations for bacteria. Therefore, the segment is assessed as not supporting the Recreation Use for E. coli. The Cypress Swamp TMDL was completed and approved by EPA on 10/14/2005.

Cypress Swamp Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			66.29

Sources:

Agriculture	Non-Point Source	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Wildlife Other than Waterfowl
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-07-DO** Cypress Swamp Tributaries

Location: All tributaries to Cypress Swamp, including Johnchecohunk Swamp and Spring Grove Swamp

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Johnchecohunk Swamp was assessed as fully supporting but threatened of the Aquatic Life use goal in 1998 for dissolved oxygen and pH based on a 1994 study that identified widespread violations throughout the watershed. During the year 2004 cycle, the pH violations was confirmed and Johnchecohunk Swamp was initially listed for pH in 2004. Spring Grove Swamp was listed for DO and pH in 2002, with a TMDL due date of 2014.

During the 2006 cycle, the entire nontidal Blackwater River watershed was reclassified as Class VII swampwaters and additional watershed monitoring was performed on the Cypress Swamp tributaries. The segment was expanded to incorporate all tributaries to Cypress Swamp. The watershed is still impaired for DO with multiple violations throughout the watershed, but should be considered Cat. 4C waters until the DO criteria for swampwater can be developed.

Cypress Swamp Tributaries	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			66.29

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-08-BAC** Cypress Swamp

Location: Mainstem from its headwaters to its mouth.

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

Cypress Swamp from Johnchecohunk Swamp to its mouth (5.35 miles) was originally listed as impaired of the Recreation use during the 2002 cycle based on fecal coliform violations at the Rt. 31 bridge (5ACPP003.20). During the 2004 cycle, the impairment was extended upstream to include fecal coliform violations at 5A-PL-SCP1B and 5ACPP006.04 (Rt. 616).

In the 2006 cycle, E. coli was added as an impairing cause based on violations at 5ACPP003.20 and 5ACPP007.84 (Rt. 630). The TMDL was completed and approved by EPA on 10/14/2005.

During the 2008 cycle, the segment continued to be assessed as impaired based on E. coli violation rates of 6/22 and 2/12 at station 5ACPH003.20 and 5ACPH006.04, respectively. The impairment was converted to E. coli.

Cypress Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			16.35

Sources:

Agriculture	Non-Point Source	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Wildlife Other than Waterfowl
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-10-DO** **Spring Branch**

Location: Mainstem from its headwaters to its mouth.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Spring Branch is considered not supporting the Aquatic Life Use due to dissolved oxygen violation rates of:
4/46 at 5ASRN000.65 (Rt. 613 bridge)
7/32 at 5ASRN000.66 (Bryants Pond)
4/46 at 5ASRN001.24 (25 meters below Waverly STP)
5/17 at 5ASRN001.90 (140 m below Rt. 653)
20/45 at 5ASRN001.99 (Rt. 653/Spring Branch Road)
12/44 at 5ASRN003.69 (Rt. 640 bridge)
9/36 at 5ASRN003.82 (above Spurlock outfall)
6/28 at 5AXFG000.04 (UT below Spurlock outfall)

The segment is classified a Class VII swampwater, but as of the 2008 cycle, the DO criteria for swampwater has not been developed. Spring Branch will be considered a Cat. 4C water until the DO standard is developed.

Spring Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.93

Sources:

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-11-BAC** **XDR - UT to Otterdam Swamp**

Location: Headwaters to mouth

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

During the 2006 cycle, XDR (UT to Otterdam Swamp) was considered impaired of the Recreation Use due to a fecal coliform violation rate of 9/16 at 5AXDR00.38. The E. coli rate was 1/2, which is considered insufficient for assessment. Further monitoring is recommended.

XDR - UT to Otterdam Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			2.46

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-11-DO** XDR - UT to Otterdam Swamp

Location: Headwaters to mouth

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

During the 2006 cycle, XDR (UT to Otterdam Swamp) was assessed as impaired of the Aquatic Life Use due to a dissolved oxygen violation rate of 3/16 at 5AXDR000.38 (Rt. 612). However, the area is classified as Class VII swampwaters, therefore it will be considered Cat. 4C until the DO criteria for swampwater can be developed.

XDR - UT to Otterdam Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			2.46

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-12-PH** **XDS - UT to Otterdam Swamp**

Location: Headwaters to mouth

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The segment was reclassified as Class VII swampwaters during the 2006 cycle and the pH criteria was adjusted to 4.3 - 9.0 SU, however the pH violation rate remains 2/7 at 5AXDS000.54 (Route 612). Although the violations are believed to be caused by natural swampwater conditions, the segment must be assessed as Cat. 5C. No additional data was collected during the 2008 cycle.

XDS - UT to Otterdam Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			1.06

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-13-BAC** **Blackwater River - Lower/Middle/Upper**

Location: This cause encompasses the lower, middle and upper portions of the Blackwater River in K33 watershed.

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreational Use is impaired based on E.coli data exceedance of the swimming criteria indicator at Upper segment collected at Station 5ABLW058.22 (5 viol./ 21 obs.) Middle segment 3 violate / 24 obs at 5ABLW016.27. Lower segments on avg. violate 4/ 27 obs. (averaged per combined station).

Blackwater River - Lower/Middle/Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			28.86

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-13-BEN** **Blackwater River - Upper/ Lower/ and Unsegmented Tributaries & Black Creek**

Location: This cause encompasses the upper and lower portions of the Blackwater River in K33 watershed and Black Creek.

City / County: Isle Of Wight Co. South Boston City Southampton Co. Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on benthic population ratings at Stations 5ABLW052.91, 5ABLW055.26, 5ABLC000.88.Unseg Trib-Benthic IM [VI:S&F-'06] Lower Blckwtr [MI:F-'04, S&F '05] .Black Creek MI:F-'03, VI:S-'03]

Blackwater River - Upper/ Lower/ and Unsegmented Tributaries & Black Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			33.27

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-13-DO** **Blackwater River - Lower/Middle/Upper & Washole Creek**

Location: This cause encompasses the lower, middle and upper portions of the Blackwater River in K33 watershed including Washole Creek.

City / County: Isle Of Wight Co. South Boston City Southampton Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5A Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the depressed DO concentrations exceedance of the previous criteria for this parameter. Impairment is suspected due to natural conditions. Station 5ABLW000.30 is supporting DO (0 viol/2 obs), Station BLKWMOUTH has insufficient info. Station 5AWAC000.03 4vio /10 obs.

Blackwater River - Lower/Middle/Upper & Washole Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			45.95

Sources:

Municipal Point Source Discharges	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-13-HG** **Blackwater River Basin**

Location: Blackwater River and tributaries from its headwaters to the VA-State Line

City / County: Dinwiddie Co. Isle Of Wight Co. Petersburg City Prince George Co. South Boston City
Southampton Co. Suffolk City Surry Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) /
VA Category: Mercury in Fish Tissue / 5A

During the 2006 cycle, the Blackwater River from Route 31 near Dendron downstream to the Virginia-North Carolina state line was assessed as impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury.

During the 2008 cycle, the advisory was expanded to include the Blackwater River to its headwaters, including all of its tributaries. The advisory recommends consuming no more than two meals/month of largemouth bass, redear sunfish, bowfin, chain pickerel, white catfish, redhorse sucker and longnose gar.

Blackwater River Basin	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			728.37

Sources:

Atmospheric Deposition - Source Unknown
Toxics

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-14-PH** Otterdam Swamp

Location: The mainstem of Otterdam Swamp from its headwaters to Averys Pond.

City / County: Prince George Co. Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2008 cycle, the segment was assessed as not supporting of the Aquatic Life Use due to two pH violations below the allowable Class VII 4.3 SU WQS at station 5AOTR012.38. Although it is believed that the low pH is caused by natural conditions, the segment is considered a Category 5C water until the WQS can be revised to lower the Class VII standard.

Otterdam Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			5.44

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-15-DO** **Spring Branch, UT (XAW)**

Location: The unnamed tributary from its headwaters to its mouth at Spring Branch.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

During the 2008 cycle, the UT was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at the Route 460 bridge (5AXAW000.19. However, the segment is classified a Class VII swampwater, but the DO criteria for swampwater has not been developed; the tributary will be considered a Cat. 4C water until the DO standard is developed.

Spring Branch, UT (XAW)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			1.09

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-16-DO** Spring Branch, UT (XAL)

Location: The unnamed tributary from its headwaters to its mouth at Spring Branch.

City / County: Prince George Co. Surry Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

During the 2008 cycle, the UT was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 5ASRN001.99RBI. However, the segment is classified a Class VII swampwater, but the DO criteria for swampwater has not been developed.

Spring Branch, UT (XAL)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			0.71

Sources:

Municipal Point Source Discharges	Natural Conditions - Water Quality Standards Use Attainability Analyses Needed
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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-17-PH** **Reedy Branch Watershed**

Location: Reedy Branch and tributaries from its headwaters to its mouth at Otterdam Swamp.

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

During the 2008 cycle, the watershed was assessed as not supporting of the Aquatic Life Use due to pH violations below the allowable Class VII 4.3 SU WQS at stations 5AXFW000.77 and 5ARED002.15, which are located at the Route 602 bridges. Although it is believed that the low pH is caused by natural conditions, the segment is considered a Category 5C water until the WQS can be revised to lower the Class VII standard.

Reedy Branch Watershed	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			4.38

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K32R-18-BEN** **Blackwater River, UT**

Location: Unnamed tributary XFM from its headwaters to its mouth at Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

During the 2008 cycle, the tributary was assessed as not supporting the Aquatic Life Use due to impairment of the benthic community at station 5AXFM000.88, which is located at the Route 613 bridge.

Blackwater River, UT	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			3.00

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K34R-01-DO** **Mill Swamp**

Location: This cause encompasses the area at confluence of Moores Swamp with Mill Swamp (mile 16.78) downstream to confluence with Rattlesnake Swamp (mile 0.0). Located northwest of Raynor, upstream tributary to Rattlesnake Swamp.

City / County: Isle Of Wight Co. Surry Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations, impairment continued from 2004 IR (segment Class change from III to VII, can not delist previous impairments since current criteria not applicable to Class VII water).

Mill Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			8.36

Sources:

- Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K34R-02-DO** **Rattlesnake Swamp**

Location: This cause encompasses the entirety of Rattlesnake Swamp. Segment from confluence of Pouches Swamp, downstream to confluence with Blackwater River.

City / County: Isle Of Wight Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations, impairment continued from 2004 IR. Classified as Class VII without a set criteria for DO therefore impairment will be carried over.

Rattlesnake Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			6.09

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35L-01-DO** **Airfield Pond**

Location: This cause encompasses the Pond North of Lightwood Swamp; Off of State Route 628

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life use is impaired based on the DO criteria exceedance at Station 5ALTD005.10. with 5 viol / 33 obs.

Airfield Pond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			120.07

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35L-01-PH** **Airfield Pond**

Location: This cause encompasses the Pond North of Lightwood Swamp; Off of State Route 628

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The Aquatic Life use is impaired based on the pH criteria exceedance at Station 5ALTD005.10. with 6 viol/ 37 obs.

Airfield Pond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			120.07

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-01-DO** **Seacock Swamp - Upper**

Location: This cause encompasses the upper portion of Seacock Swamp, from Drumwright Pond downstream to confluence with unnamed tributary, approx. 0.1 mi downstream of Rt 628 crossing.

City / County: Southampton Co. Surry Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations, impairment continued from 2004 IR. No Class VII water criteria for DO.

Seacock Swamp - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			0.80

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-02-BAC** **Seacock Swamp - Lower**

Location: This cause encompasses the Lower portion of Seacock Swamp South of Doles Crossroads, West of State Hwy 600.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreational Use is impaired based on Fecal Coliform exceedance of the swimming criteria indicator. New E.coli data has 1 violation with 1 observation. Additional bacteria data is required to remove the previous assessment of impaired.

Seacock Swamp - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			2.63

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-02-BEN** **Seacock Swamp - Lower**

Location: This cause encompasses the Lower portion of Seacock Swamp South of Doles Crossroads, West of State Hwy 600.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on Benthic population rating at Station 5ASCK003.84 Benthic IM [MI:S-'04].

Seacock Swamp - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			2.63

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-03-BAC** **UT Seacock Swamp**

Location: This cause encompasses the UT to Seacock Swamp, from Headwaters to confluence with Seacock Swamp mainstem. PRO
CAFO special study.

City / County: Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreational Use is impaired based on data over 5 years old. No E.coli data was collected for the 2008 Assessment
however the impaired status was retained from Fecal Coliform data.

UT Seacock Swamp	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Fecal Coliform - Total Impaired Size by Water Type:			1.03

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-03-DO** **UT Seacock Swamp**

Location: This cause encompasses the UT to Seacock Swamp, from Headwaters to confluence with Seacock Swamp mainstem. PRO
CAFO special study.

City / County: Surry Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the depressed DO concentrations, impairment continued from 2004 IR. Class VII DO
criteria is not defined for this Assessment.

UT Seacock Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			1.03

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-04-BAC** **UT Airfield Pond - Lower**

Location: This cause encompasses the Willis Branch to Airfield Pond, Segment starts near Rt 622 downstream to Airfield Pond. PRO CAFO special study.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreational Use is impaired based on E.coli exceedance of the swimming criteria indicator collected at Station 5AXDZ001.73 with 2 violates/ 2 obs. TMDL is 2016 since Fecal Coliform was cause for impairment since listed in 2004.

UT Airfield Pond - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			0.71

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-04-DO** **UT Airfield Pond - Lower**

Location: This cause encompasses the Willis Branch to Airfield Pond, Segment starts near Rt 622 downstream to Airfield Pond. PRO
CAFO special study.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations impairment continued from 2004 IR. Class VII DO
criteria is not defined for this Assessment.

UT Airfield Pond - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			0.71

Sources:

- Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-05-BAC** **UT Airfield Pond - Upper**

Location: This cause encompasses the UT (Willis Branch) to Airfield Pond from Headwaters to half-way between Rt 622 and Rt 729 (approx. RM 1.23) at confluence with UT. PRO CAFO special study.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on retained Fecal coliform exceedance of the swimming criteria indicator (13 violates / 16 obs). E.coli data exceed(2 violates / 2 obs). TMDL due date retained per H. Augustine e-mail 2/6/06.

UT Airfield Pond - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			0.68

Sources:

Animal Feeding Operations Source Unknown
(NPS)

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-05-DO** **UT Airfield Pond - Upper**

Location: This cause encompasses the UT (Willis Branch) to Airfield Pond from Headwaters to half-way between Rt 622 and Rt 729 (approx. RM 1.23) at confluence with UT. PRO CAFO special study.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations, impairment continued from 2004 IR (segment Class change from III to VII).

UT Airfield Pond - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			0.68

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-06-BAC** **Seacock Swamp - Upper**

Location: This cause encompasses the upper portion of Seacock Swamp, from Drumwright Pond downstream to confluence with unnamed tributary, approx. 0.1 mi downstream of Rt 628 crossing.

City / County: Southampton Co. Surry Co.

Use(s): Recreation

Cause(s) /
VA Category: Fecal Coliform / 5A

The Recreation Use impairment is retained from the 2006 IR based on previous exceedance of the Fecal Coliform bacteria since no E.coli data collected. Station 5ASCK018.65 in 2006 had 2 viol/ 8 obs for Fecal Coliform.

Seacock Swamp - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			0.80

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-07-DO** **Brantley Swamp - Lower**

Location: This cause encompasses the area from confluence with Lightwood Swamp downstream to confluence with Seacock Swamp.
Located northeast of Pulleys Crossroads.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations, impairment continued from 2004 IR. Class VII waters do not have DO criteria for 2008 Assessment.

Brantley Swamp - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.52

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K35R-08-BEN** **Round Hill Swamp**

Location: The cause encompasses the confluence of Seacock Swamp between State Route 614 and State Route 623.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the benthic population rating from Benthic ProbMon-Benthic sample events [MI:S-'05].

Round Hill Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			0.62

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K37R-01-DO** **Buckhorn Creek**

Location: This cause encompasses all of Northern Branch of Buckhorn Creek (within Virginia).

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 4C

The Aquatic Life Use impaired based on depressed DO concentrations, impairment continued from 2004 IR (segment Class change from III to VII). No data was collected within this watershed during the current assessment period (1/1/2001 thru 12/31/2006).

Buckhorn Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			1.55

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K37R-01-PH** **Buckhorn Creek**

Location: This cause encompasses all of Northern Branch of Buckhorn Creek (within Virginia).

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

The Aquatic Life Use impaired based on depressed pH concentrations, impairment continued from 2004 IR (segment Class change from III to VII). No data was collected within this watershed during the current assessment period (1/1/2001 thru 12/31/2006).

Buckhorn Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			1.55

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-01-BEN** **Somerton Creek**

Location: This cause encompasses the area of Somerton Creek from 5 miles upstream from monitoring station (RM 10.36) downstream to VA/NC state line.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic Impairments at both Station 5ASTN002.43 AND 5ASTN008.78. At Station 5ASTN002.43 Benthic ProbMon-Benthic IM [MI:F&S-'01]01-OE, Sed_Tox-Chlordane, DDD,DDE, Heptochlor_epox]. Station 5ASTN008.78 Benthic IM [MI:F-'04].

Somerton Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			9.09

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-01-DO** **Somerton Creek**

Location: This cause encompasses the area of Somerton Creek from 5 miles upstream from monitoring station (RM 10.36) downstream to VA/NC state line.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

The Aquatic Life Use is impaired based on DO exceedance of the criteria for this parameter at Station 5ASTN008.78. DO data violates 14 times out of 38 observations.

Somerton Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			9.09

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-01-PH** **Somerton Creek**

Location: This cause encompasses the area of Somerton Creek from 5 miles upstream from monitoring station (RM 10.36) downstream to VA/NC state line.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

The Aquatic Life Use is impaired based on pH exceedance of the criteria for this parameter at Station 5ASTN008.78. Data violates 6 out of 37 observations.

Somerton Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			9.09

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-02-BAC** **March Swamp**

Location: This cause encompasses entirety of March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on the E.coli data exceedance of the swimming criteria indicator (3 violates / 14 obs.)

March Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			7.45

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-02-DO** **March Swamp**

Location: This cause encompasses entirety of March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the depressed DO concentrations, impairment continued from 2004 IR (segment Class change from III to VII). No criteria for DO in 2008 Assessment.

March Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			7.45

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-02-PH** **March Swamp**

Location: This cause encompasses entirety if March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use is impaired based on depressed pH concentrations, impairment continued from 2004 IR (segment Class change from III to VII).

March Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			7.45

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-03-DO** **Chapel Swamp**

Location: This cause encompasses the entirety of Chapel Swamp. Northern tributary of Somerton Creek. Located east of Cleopus.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on depressed DO concentrations, impairment continued from 2004 IR (segment Class II). Impairment is suspected due to natural swamp conditions present in these waters.

Chapel Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			8.18

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K38R-03-PH** **Chapel Swamp**

Location: This cause encompasses the entirety of Chapel Swamp. Northern tributary of Somerton Creek. Located east of Cleopus.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5C

The Aquatic Life Use impaired due to depressed pH concentrations, impairment continued from 2004 IR (segment Class II).
Impairment is suspected due to natural swamp conditions present in these waters.

Chapel Swamp	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			8.18

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K39L-01-DO** **Lake Drummond**

Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on the pooled DO exceedance of the criteria for this parameter with a violation rate of is 13.3 % (75 obs/ 10 exceeds).

Lake Drummond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:		3,241.96	

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K39L-01-HG** **Lake Drummond**

Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Fish Consumption

Cause(s) /

VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Bowfin and Chain Pickerel (issued 10/2003 & modified 7/27/05, 8/31/2007 recommending no more than two meals/month due to Hg reported in fish tissue)

Lake Drummond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			3,241.96

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K39L-01-PH** **Lake Drummond**

Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The Aquatic Life Use is impaired based on the pooled pH exceedance of the criteria for this parameter with a violation rate of 100% (59 violates/59 obs).

Lake Drummond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:		3,241.96	

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K39R-01-DO** **Dismal Swamp Canal & Feeder Ditch to Lake Drummond**

Location: This cause encompasses the Dismal Swamp Canal from Deep Creek Locks to VA/NC state line and including Feeder Ditch to Lake Drummond.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

The Aquatic Life Use is impaired based on the DO data that exceed the criteria for this parameter with 7 violates/ 37 obs.

Dismal Swamp Canal & Feeder Ditch to Lake Drummond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			14.07

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K39R-01-HG** **Dismal Swamp Canal & Feeder Ditch to Lake Drummond**

Location: This cause encompasses the Dismal Swamp Canal from Deep Creek Locks to VA/NC state line and including Feeder Ditch to Lake Drummond.

City / County: Chesapeake City

Use(s): Fish Consumption

Cause(s) /

VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Bowfin and Chain Pickerel (issued 10/2003 & modified 7/27/05, recommending no more than two meals/month due to Hg reported in fish tissue).

Dismal Swamp Canal & Feeder Ditch to Lake Drummond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Fish Consumption			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			14.07

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K39R-01-PH** **Dismal Swamp Canal & Feeder Ditch to Lake Drummond**

Location: This cause encompasses the Dismal Swamp Canal from Deep Creek Locks to VA/NC state line and including Feeder Ditch to Lake Drummond.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 4C

The Aquatic Life is impaired based on pH exceedance of the criteria for this parameter with 36 violates/37 obs.

Dismal Swamp Canal & Feeder Ditch to Lake Drummond	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			14.07

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-01-BAC** **Unnamed tributary to Northwest River**

Location: This cause encompasses the Unnamed trib to Northwest River from St Brides Rd crossing to confluence with Northwest River. Within PWS area.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli concentrations exceedance of the swimming indicator criteria (16 violates/ 35 obs).

Unnamed tributary to Northwest River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			3.92

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-01-DO** **Unnamed tributary to Northwest River**

Location: This cause encompasses the Unnamed trib to Northwest River from St Brides Rd crossing to confluence with Northwest River. Within PWS area.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the low dissolved oxygen concentrations that exceed the criteria for this parameter. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring.

Unnamed tributary to Northwest River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.92

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-02-BAC** Northwest River - Upper

Location: This cause encompasses the Northwest River from mile 22.15 to 16.63, upstream of Chesapeake's intake and PWS area.
From the headwaters downstream to start of PWS area, upstream of Pine Grove Lane.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on the E.coli concentrations exceeding the swimming criteria indicator. Both upstream Stations 5BNTW012.86 and 5BNTW011.90 exceed E.coli criteria (3 violates/ of 27 obs).

Northwest River - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			6.42

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-02-DO** Northwest River - Upper

Location: This cause encompasses the Northwest River from mile 22.15 to 16.63, upstream of Chesapeake's intake and PWS area. From the headwaters downstream to start of PWS area, upstream of Pine Grove Lane.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired based on low dissolved oxygen. The DO was assessed using downstream stations 5BNTW012.86 & 5BNTW011.90, impairment due to low dissolved oxygen concentrations.

Northwest River - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			6.42

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-04-BAC** Northwest River - Middle

Location: This cause encompasses the Northwest River from RM 16.63 (start of PWS) to RM 10.44. From start of PWS area, upstream of Pine Grove Lane, downstream to Indian Cr. confluence.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on the E.coli concentrations exceeding the swimming criteria indicator. Both Stations 5BNTW012.86 and 5BNTW011.90 exceed E.coli criteria 3 out of 27 observations

Northwest River - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			6.23

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-04-DO** Northwest River - Middle

Location: This cause encompasses the Northwest River from RM 16.63 (start of PWS) to RM 10.44. From start of PWS area, upstream of Pine Grove Lane, downstream to Indian Cr. confluence.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring.

Northwest River - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			6.23

Sources:

Natural Conditions - Water Source Unknown
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-05-DO** Northwest River - Lower

Location: This cause encompasses the Northwest River from RM 10.44 (Indian Cr. confluence) downstream to mile 8.23 (downstream of Smith Cr.).

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring

Northwest River - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			2.99

Sources:

- Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-06-BAC** Indian Creek tributary to Northwest River.

Location: This cause encompasses the area from the St. Brides Rd. crossing downstream to the confluence with the Northwest River.
Located southeast of Saint Brides.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli data exceed the swimming criteria indicator (3 violates / 23 obs).

Indian Creek tributary to Northwest River.	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			3.47

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K40R-06-DO** Indian Creek tributary to Northwest River.

Location: This cause encompasses the area from the St. Brides Rd. crossing downstream to the confluence with the Northwest River.
Located southeast of Saint Brides.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the low DO. Combination of probable natural low D.O. due swamp waters & possible urban development causing phosphorus/low DO.

Indian Creek tributary to Northwest River.	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.47

Sources:

- Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-01-DO** **Pocaty River**

Location: This cause encompasses the Pocaty River and selected tribs. from headwaters at mile 3.92 to confluence with North Landing River at mile 0.00.

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring.

Pocaty River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			7.24

Sources:

Natural Conditions - Water Source Unknown
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-02-BAC** **Milldam Creek - Lower**

Location: This cause encompasses the tidally influenced portion of Milldam Creek from Blackwater Rd. crossing (RM 1.92) to confluence with North landing River @ RM 0.00.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 4A

The Recreation Use is impaired based on E.coli concentrations exceeding the swimming criteria indicator (12violates/47 obs).

Milldam Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			2.50

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-02-DO** **Milldam Creek - Lower**

Location: This cause encompasses the tidally influenced portion of Milldam Creek from Blackwater Rd. crossing (RM 1.92) to confluence with North landing River @ RM 0.00.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring and due to high organic content and stagnant (low freshwater flow) conditions within these waters.

Milldam Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			2.50

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Chowan River and Dismal Swamp Basins

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Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-03-DO** **Albemarle Canal (upstream of North Landing River)**

Location: This cause encompasses the Albemarle and Chesapeake Canal (Intracoastal Waterway) from Great Bridge Locks downstream to confluence with North Landing R. (RM 13.65).

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring

Albemarle Canal (upstream of North Landing River)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			8.80

Sources:

- Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-04-BAC** **North Landing River - Middle**

Location: This cause encompasses the area East of Fentress Landing Field , between confluence with West Neck Creek and Pocaty River.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The Recreational Use is impaired based on E.coli data exceedance of the swimming criteria indicator collected at Station 5BNLR010.75 with 2 violates out of 10 obs.

North Landing River - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			1.43

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-04-CHLR** **North Landing River - Middle/ Lower**

Location: This cause encompasses the area below Pocaty River confluence with North Landing downstream to VA/NC state line (RM 0.0).

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chloride / 5C

The Aquatic Life Use is impaired based on Chloride exceedance of the criteria for this parameter. The cause of the chloride standard exceedance is attributed to naturally occurring conditions of saline water intrusion from downstream estuarine waters (Currituck Sound).

North Landing River - Middle/ Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Chloride - Total Impaired Size by Water Type:			12.43

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-05-BAC** **West Neck Creek - Middle**

Location: This cause encompasses the area from south side of Princess Anne road crossing (RM 6.20) downstream to widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on E.coli exceedance of the swimming criteria indicator (13 violates/ 67 obs).

West Neck Creek - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			3.59

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-05-DO** **West Neck Creek - Middle**

Location: This cause encompasses the area from south side of Princess Anne road crossing (RM 6.20) downstream to widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on the low dissolved oxygen concentrations. The cause of the depressed Dissolved Oxygen concentrations is suspected to be naturally occurring and due to high organic content and stagnant conditions within swamp waters.

West Neck Creek - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			3.59

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Chowan River and Dismal Swamp Basins

Natural Conditions - Water
Quality Standards Use
Attainability Analyses
Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-08-BAC** **Blackwater Creek**

Location: This cause encompasses the Blackwater Creek from headwaters at RM 3.2 to confluence with North Landing River Rm 0.0.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) /
VA Category: Escherichia coli / 5A

The Recreation Use is impaired based on the E.coli concentrations exceeding the swimming criteria indicator (4 violates/ 24 obs).

Blackwater Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			4.41

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-08-DO** **Blackwater Creek**

Location: This cause encompasses the Blackwater Creek from headwaters at RM 3.2 to confluence with North Landing River Rm 0.0.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on Dissolved Oxygen data that exceed the criteria for this parameter. Station 5BBKW002.50 violates DO criteria 4 out of 38 obs.

Blackwater Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			4.41

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed
- Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-11-CHLR** **North Landing River - Middle**

Location: This cause encompasses area from confluence with Intracoastal Waterway (RM 13.65) downstream to instream Island (RM 12.01, upstream of confluence of West Neck Creek).

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /

VA Category: Chloride / 5C

The Aquatic Life Use is impaired based on the chloride exceedance of acute criteria (freshwater criteria apply since classified Tidal Freshwater).

North Landing River - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Chloride - Total Impaired Size by Water Type:			2.23

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K41R-11-DO** **North Landing River - Middle**

Location: This cause encompasses area from confluence with Intracoastal Waterway (RM 13.65) downstream to instream Island (RM 12.01, upstream of confluence of West Neck Creek).

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen concentrations is suspected to be naturally occurring and due to high organic content and stagnant conditions.

North Landing River - Middle	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			2.23

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-01-BAC** **Nawney Creek - Upper**

Location: This cause encompasses the Upper portion of Nawney Creek, 0.8 mi. upstream of Nawney Creek Road bridge (RM 1.92) downstream 0.6 mi. from Nawney Creek Road bridge to RM 1.24.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 4A

The Recreational Use is impaired based on Enterococci data that exceed the swimming criteria indicator with 13 violate/ 26 observations.

Nawney Creek - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:			
	0.022		

Sources:

Animal Feeding Operations (NPS)	Crop Production (Crop Land or Dry Land)	Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
Runoff from Forest/Grassland/Parkland	Waterfowl	Wildlife Other than Waterfowl	

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Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-01-DO** **Nawney Creek - Upper**

Location: This cause encompasses the Upper portion of Nawney Creek, 0.8 mi. upstream of Nawney Creek Road bridge (RM 1.92) downstream 0.6 mi. from Nawney Creek Road bridge to RM 1.24.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on Dissolved Oxygen that exceed the criteria for this parameter. Station 5BNW001.84 16violates/ 62 obs). This is an area of hardwood swamp/wetlands where low dissolved oxygen levels can naturally occur.

Nawney Creek - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:	0.022		

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-02-BAC** **Nawney Creek - Lower**

Location: This cause encompasses the lower portion of Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bay).

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 4A

The Recreation Use is impaired based on Enterococcus data exceed the swimming criteria indicator (13 violations/ 25 obs).
Previous FC impairment replaced by Enterococcus, with TMDL due date retained.

Nawney Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:	0.018		

Sources:

Crop Production (Crop Land or Dry Land)	Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Runoff from Forest/Grassland/Parkland
Waterfowl	Wildlife Other than Waterfowl		

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-02-CHLR** **Nawney Creek - Lower**

Location: This cause encompasses the lower portion of Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bay).

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chloride / 5A

The Aquatic Life Use is impaired based on the exceedance of the criteria for this parameter. The cause of the chloride standard exceedance is attributed to naturally occurring conditions of saline water intrusion from upstream and downstream estuarine waters.

Nawney Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Chloride - Total Impaired Size by Water Type:	0.018		

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-02-DO** **Nawney Creek - Lower**

Location: This cause encompasses the lower portion of Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bay).

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5A

The Aquatic Life Use is impaired for Dissolved Oxygen that exceed the criteria for this parameter. DO data 8 violates/ 71 obs.

Nawney Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:	0.018		

Sources:
Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-03-BAC** **Hell Point Creek - Lower (at mouth)**

Location: This cause encompasses the area at intersection of creek and canal upstream of monitoring station and ends at mouth, confluence with North Bay.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus data that exceed the swimming criteria indicator with 8 violate/ 21 obs.

Hell Point Creek - Lower (at mouth)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:			
	0.026		

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-04-BAC** **Muddy Creek**

Location: This cause encompasses area at confluence with Ashville Bridge Creek and ends at the mouth, the confluence with North Bay.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus data that exceed the swimming criteria indicator (12 violate/ 27 obs).

Muddy Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:			
	0.040		

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-04-CHLR** **Muddy Creek**

Location: This cause encompasses area at confluence with Ashville Bridge Creek and ends at the mouth, the confluence with North Bay.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chloride / 5A

The Aquatic Life Use is impaired based on the Chloride exceedance of the criteria for this parameter. The cause of the chloride standard exceedance is attributed to naturally occurring conditions of saline water intrusion from upstream and downstream estuarine waters.

Muddy Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Chloride - Total Impaired Size by Water Type:			
	0.040		

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-05-BAC** **Beggars Bridge Creek**

Location: This cause encompasses the area southeast of Dawley Corners, tributary to Shipps Bay. Segment begins at the confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the mouth at the confluence with Shipps Bay.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococcus data that exceed the swimming criteria indicator (8 violates/ 26 obs)

Beggars Bridge Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:			
	0.033		

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-05-CHLR** **Beggars Bridge Creek**

Location: This cause encompasses the area southeast of Dawley Corners, tributary to Shipps Bay. Segment begins at the confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the mouth at the confluence with Shipps Bay.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chloride / 5C

The Aquatic Life Use is impaired based on the Chloride exceedance of the criteria for this parameter. The cause of the chloride standard exceedance is attributed to naturally occurring conditions of saline water intrusion from upstream and downstream estuarine waters.

Beggars Bridge Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Chloride - Total Impaired Size by Water Type:	0.033		

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-06-BAC** **Ashville Bridge Creek - Lower**

Location: This cause encompasses the lower portion of Ashville Br. Cr., between Hell Point and Muddy Creeks.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on the E.coli data that exceed the swimming criteria indicator at Station 5BASH002.20 with 5 violates/ 20 obs.

Ashville Bridge Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:		0.022	

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-06-DO** **Ashville Bridge Creek - Lower**

Location: This cause encompasses the lower portion of Ashville Br. Cr., between Hell Point and Muddy Creeks.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Oxygen, Dissolved / 5C

The Aquatic Life Use is impaired based on low dissolved oxygen concentrations 5 violates/41obs. Source of low dissolved oxygen is probably natural conditions

Ashville Bridge Creek - Lower	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:	0.022		

Sources:

Natural Sources Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-07-CHLR** **Back Bay**

Location: This cause encompasses majority of main Back Bay waters.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: Chloride / 5C

The Aquatic Life Use is impaired based on the Chloride exceedance of the criteria for this parameter. The cause of the chloride standard exceedance is attributed to naturally occurring conditions of saline water intrusion from upstream and downstream estuarine waters.

Back Bay	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Chloride - Total Impaired Size by Water Type:			
	18.146		

Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

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Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-08-BAC** **Redhead Bay at Drum Point**

Location: This cause encompasses Redhead Bay at Drum Point, mouth of Nawney Creek. From southern end of Great Narrows south to Ragged Isl. around Mose Island Point.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreational Use is impaired based on Enterococci data exceed the swimming criteria indicator 3 violates/ 21 obs.

Redhead Bay at Drum Point	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:			
	0.199		

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-09-PH** **Shipps Bay, Back Bay Area**

Location: This cause encompasses the area of Shipps Bay portion of main Back Bay waters. South of North Bay extending south to the north end of Great Narrows.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) /
VA Category: pH / 5A

The Aquatic Life Use is impaired based on pH concentrations exceed the criteria for this parameter (3/21 - 5.81, 5.91, 5.92 SU] just below minimum for Class III waters (6.0 SU). No seasonal pattern to exceedances.

Shipps Bay, Back Bay Area	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			
	3.012		

Sources:

Source Unknown

Appendix A - List of Impaired (Category 5) Waters in 2008*

Chowan River and Dismal Swamp Basins

Cause Group Code **K42E-10-BAC** **Hell Point Creek - Upper**

Location: This cause encompasses the area west of Sandbridge. Segment from headwaters downstream to RM 0.73, intersection of creek with canal near mouth.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) /
VA Category: Enterococcus / 5A

The Recreation Use is impaired based on Enterococci data that exceed the swimming criteria indicator (7 violate / 26 obs).

Hell Point Creek - Upper	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Enterococcus - Total Impaired Size by Water Type:			
	0.030		

Sources:

Municipal Point Source Source Unknown
Discharges